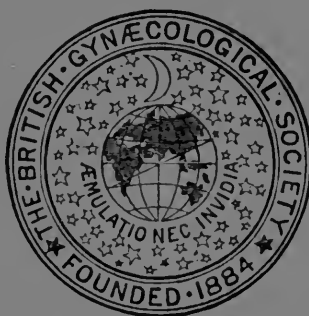


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May, 1888.

THE BRITISH  
GYNÆCOLOGICAL  
JOURNAL:  
*being the*  
JOURNAL OF THE  
BRITISH GYNÆCOLOGICAL SOCIETY



*Edited by*  
FANCOURT BARNES, M.D.

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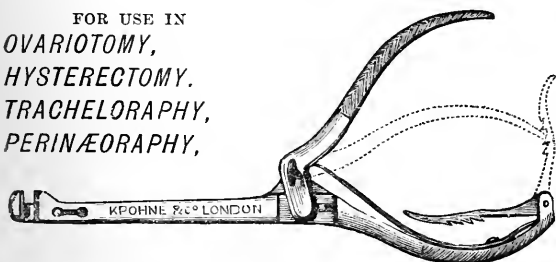
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# THE BRITISH GYNÆCOLOGICAL JOURNAL

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VOL. IV.—NO. 13.

MAY, 1888.

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*THE BRITISH GYNÆCOLOGICAL SOCIETY.*

WEDNESDAY, JANUARY 25th, 1888.

ARTHUR W. EDIS, M.D., F.R.C.P., PRESIDENT, IN THE CHAIR.

PRESENT: 27 Fellows, 2 Visitors.

The following were proposed for election:—Dr. G. D. Mackintosh, London; Dr. Charles Horace Barkley, London; Dr. Rothwell Adam, Melbourne.

Dr. BANTOCK brought a number of interesting specimens before the Society:—

Case I was that of a woman, æt. thirty, married, having given birth to a five months' fœtus five years ago, recovery after confinement not having been satisfactory. She had been an invalid ever since from severe hæmorrhage, which had not been checked by the various methods of treatment to which she had been subjected. The uterus had been dilated and curetted, but the hæmorrhage had continued. The diagnosis of the case was by no means easy. It was supposed that there was a fibroid tumour of the uterus, and as all treatment, local and constitutional, had failed to relieve, he had suggested opening the abdomen to find out what was really the matter. He did so, and removed the left ovary, in which was

formed a blood-cyst of considerable size, while on the right side there was a large hæmato-salpinx, the ovary on that side being also very much enlarged. These were very adherent, and the peritoneal cavity had to be washed out and drained. The progress of the case, after the operation, was eminently satisfactory, but he was disappointed to find that the patient had not got rid of the hæmorrhage. Menstruation had returned and was very excessive. The tubes were removed as close as possible to the uterus. He alluded to the observations of Dr. Johnson, of Danville, Kentucky, in which it was shewn that the application of ligature close to the uterus was likely to check hæmorrhage. He said that the failure in this case might be due to the imperfect application of the ligatures, although he had endeavoured to apply the ligatures as near to the uterus as possible, or, it might be due to some conditions of the uterus; this the future would show.

Case 2 was one of blood cyst of the left ovary. He shewed the sac of the ovary, which had been considerably reduced in size from shrinkage. It had contained five or six ounces of liquid blood, and was very adherent. On the right side there was a hydro-salpinx with enlarged ovary. In that case also, it had been necessary to wash out the peritoneum and drain. The result of the operation was perfectly satisfactory, the operation having been performed on November 30th.

Case 3 was one of removal of the appendages for fibroid tumour and hæmorrhage. That case was interesting from the condition of the Fallopian tube. The appearance of the specimens gave no idea of its appearance at the time of removal. The sacculated left tube exactly resembled a knuckle of intestine greatly distended, with semi-transparent walls. Adhesions added greatly to the difficulty of the operation. On the other side the ovary was large and succulent, and contained a cyst, and the tube was thickened and tortuous. The patient had had a number of children, and was forty-six years of age. The hæmorrhage was troublesome, and he could suggest nothing but removal of



the appendages to check it. He, however, had not anticipated finding anything of the kind he saw on operating. The tumour filled the cavity of the pelvis, and rendered it very difficult to provide for drainage. He was obliged to put a tube down the right side of the uterus, and this he removed three days later. The patient did well.

Case 4. The next case was in many respects the most interesting. The history was that of an extra-uterine pregnancy. The patient had been operated on eight years ago by Dr. Savage, of Birmingham, for an ovarian tumour of a small size, which he removed. She was then seventeen years of age. A year ago she married, and three months ago menstruation ceased. On lifting a weight, one day, she felt a sharp pain and became ill, being obliged to keep her bed, and having a high temperature. When he first saw her on admission he found a tumour on the right side of the uterus, appearing over the fundus uteri, and apparently dipping down into Douglas' pouch behind. It could be distinctly felt over the pubes, but there was a clear resonant note over the tumour, rendering the diagnosis somewhat obscure. This was subsequently accounted for by the discovery that the cœcum was adherent to the front of the tumour and over the right half of the fundus uteri, and had to be separated during the operation. First of all he found a cystic tumour about the size of a goose's egg, which burst when he began to break down the adhesions, giving exit to a quantity of thin black liquid blood. It then became difficult to trace the cyst wall, and he found nearer the fundus of the uterus a hard body, which he proceeded at once to separate. He brought out a clot of blood about three inches long, and the size and shape of a large sausage, composed of solid clotted blood, perfectly black in the interior. Having taken that away he came upon the collapsed cyst, but he could hardly imagine that the large clot he had removed had come out of it, although that was possible—at any rate in part. He then produced what was evidently the remains of the ovary. The difficulty then was to get hold of the tube. It was so adherent right down on

Douglas' pouch, that he had lost all trace of its outline. It was almost impossible to get it away, and he was only enabled to do it by the aid of a pair of forceps. Ultimately he got hold of the fimbriated extremity which had become attached to the broad ligament. At the bottom of Douglas' pouch his finger slipped into a cavity, which he thought was the vagina, only the passage of Mr. Meredith's finger into the vagina convincing him of the error. He broke down the adhesions between this cavity and the pelvis, and cleared it out. He said that he wished to call attention to the use of the stream of water in cleansing the pelvis. It would have been impossible by means of sponges, which, moreover, by damaging the tissues might have increased the bleeding. A drainage tube was put in. The operation was performed on the 18th inst., and the patient had progressed so satisfactorily that she was in the convalescent ward. No trace was found of anything in the nature of an extra-uterine foetation.

Dr. ROUTH asked whether the removal of the appendages in the third case had checked the hæmorrhage.

Dr. BANTOCK replied that the operation was performed on the 15th of last month, and although, so far, there had been no return of the hæmorrhage, it was rather premature to affirm that it had done so definitely.

Dr. EDIS (President), observed that one often regretted that such cases as those brought before the Society by Dr. Bantock had not been embodied in a paper, together with the life history of the patient, &c. What they all wanted was clinical information, and interesting as were the specimens, they failed to afford this particular information.

Dr. ROUTH said that, in reference to Dr. Bantock's remarks as to cutting off the tube close to the uterus not arresting the bleeding, Mr. Lawson Tait had stated definitely that in the case in which he had failed to arrest the hæmorrhage, it was due to that very reason. He asked whether, in regard to that case, Dr. Bantock had satisfied himself that there was no growth in the uterus itself. He alluded to a case under his care in which the patient had one of the largest

fibroid tumours he had ever seen, reaching to the diaphragm. She did not suffer much from hæmorrhage, and had always refused surgical interference. By and by she was seized with profuse hæmorrhage, and this he had found was due to some small unicorn polypi of the uterus, the removal of which stopped the hæmorrhage. He pointed out that there were hundreds of cases of fibroid tumours of the uterus unaccompanied by hæmorrhage, but when hæmorrhage did take place, they generally put it down to the tumours, and he suggested that they ought always to examine the cavity of the uterus before proceeding to the abdomen operation. He thought that this might account for the favourable result of electrical treatment in such cases.

Mr. BLAND SUTTON pointed out that in one case the fact that the tubes had not been removed close to the uterus had been verified when the fundus uteri was subsequently removed. On that occasion the remaining tube was found to have re-dilated and formed a secondary hæmato-salpinx. He asked Dr. Bantock what was the temperature of the water used, and whether it was hot enough to have a hæmostyptic action?

Dr. R. T. SMITH asked Dr. Bantock to be kind enough to give the clinical symptoms of the second case; and in reference to the fourth case, what was the size of the uterus? He said that the difficulty was to decide when to do the operation, and it would be a very great advantage to have a clearer clinical history. Two years ago he had a case in the hospital with flooding of four months' standing. He had tried almost everything to stop it—he had dilated the uterus and found some little cystic growths. For three days the patient remained in bed and had no symptoms whatever, but on the fourth day she had a rigor, and a temperature of 105°F., and died in about six hours. At the post mortem he found a small abscess in the left ovary, which bore the appearance of having been there some time. Not more than a month ago he had a very similar case in a young woman of 21, who had been bleeding for three months. He dilated the

uterus with every care and applied matico, and again, in two days that patient died from profuse hæmorrhage, which nothing would stop. At the post mortem he had found slight cystic disease of the ovaries.

Dr. BANTOCK, in reply, reminded Dr. Routh that in the case alluded to the uterus had been subjected to dilatation and curetage without effect, before he was called in. He was glad he had not attempted to repeat it when he found out the condition of the left ovary and tubes, for it might have lighted up some active mischief in the diseased organs, as in the cases just related by Dr. R. T. Smith. He had also explained, in reference to this case, that he did not know whether the recurrence of the hæmorrhage was due to a failure to secure the root of the tubes or to intra-uterine growths. He did not hesitate at present to dilate now that he had removed all diseased factors from the pelvis. As to the action of the electric current, he had already stated that the galvano-caustic action might be of service like curetage, followed by a strong solution of iodine. In answer to Mr. Sutton's question, he said that he used hot water, primarily for cleansing purposes, but he always used it as hot as he could bear it with his hand, probably from  $110^{\circ}$  to  $115^{\circ}$ —certainly not exceeding  $120^{\circ}$ . In answer to Dr. Smith, the clinical symptoms were painful dysmenorrhœa and the presence of something in the pelvis. With reference to the last case, menstruation had only ceased two months, so that no great increase in size of the uterus could be expected.

Dr. R. T. SMITH shewed two cysts which he had removed from the labia minora of a woman of 28, who had had a child eleven years previously. They were within a third of an inch of the clitoris, and he said that he had never seen them in that situation before, and certainly not one on either side.

Mr. BLAND SUTTON observed that the site was one where dermoid sebaceous cysts might be met with. Those produced were of a mucous description.

Dr. J. A. MANSELL MOULLIN said he remembered some of the kind being shewn at the Obstetrical Society some time

ago. He asked Mr. Smith his opinion as to the etiology of these cysts, they being generally considered to be due to injury.

Dr. EDIS (President), commended the treatment, less heroic measures often failing to relieve. He had removed one a few days ago from the anterior wall of the vagina, and although the mode of removal might differ, he believed that removal was after all the proper course.

Mr. SMITH, in reply, said there was no history of injury, but the patient had acute retroflexion of the uterus with leucorrhœa.

The PRESIDENT then delivered the following inaugural address:—

*On the Relations of Gynæcology to General Therapeutics.*

GENTLEMEN,—My first and foremost duty, as President of this Society, is to tender you my most sincere and cordial thanks for the honour you have conferred upon me in electing me to the post, and to assure you that I will at all times do my utmost to uphold the dignity of the office and promote the interests and well-being of the Society by every means in my power.

If the continued success depended solely upon my own individual exertions, I might well hesitate in accepting such a position of trust. But I feel sure that those who have hitherto assisted so materially in establishing the Society, will still continue to help us in our need, and that others also, who have recently joined our ranks, will do all in their power to lighten my labours during my term of office, and enlarge the usefulness of this most successful Society.

As president of a society specially formed for the encouragement and advance of the study of Gynæcology, it may appear anomalous to some that I should venture to suggest even a hint that in directing our attention to this speciality we must be careful lest we degenerate into a society of specialists who practise their specialism to the exclusion of all else. A specialist, in its only true sense, should be one who is a good all-round surgeon and physician, and something

more; one who pays special attention to a subject, and who consequently attains superior knowledge of it, and greater skill in dealing with it. So long as the human mind remains as limited in its capacity as it is, in the large majority of men, and the field of study so vast, no one brain can contain or master the whole art and science of medicine.

The noblest work that has been done in the world has been effected by men who had the power of concentrating their attention on one subject. And yet the claims of general practice, although they may prevent any one individual from becoming a so-called pure specialist, may yet enable him to do much honest work in this department, and even assist the pure specialist in noting the conditions which produce or at least aggravate the tendency to the development of any given disorder. But the practitioner must avoid studiously falling into the error of trying to acquire "special tips" for special symptoms, whether by skimming the cream from communications to the weekly journals or from discussions at meetings of societies.

It is curious to note the narrow views of specialism held by some whose opportunities of studying disease from a general standpoint should guard them from that fallacy.

A patient presents herself complaining of inordinate menstruation, occurring too frequently or in too profuse a quantity. Straightway, without sufficiently enquiring into the probable causes of this and endeavouring to ascertain the conditions which have led up to this result, some accredited formula, such as sulphuric or gallic acid, ergot or hazeline, acetate of lead and opium, or some favourite or fashionable remedy, is prescribed and success confidently predicted. As time wears on and the promised improvement does not take place, the patient appeals to some specialist, thinking that some actual disease of the womb must be present.

Before even resorting to any local examination the habits of the patient are enquired into, the condition of the heart and lungs, liver and other abdominal organs examined, and every effort made to solve what may at first prove to be a

very difficult problem. Habitual constipation, hepatic congestion, from a too frequent resort to the use of stimulants, want of appropriate exercise, and neglect of all the ordinary hygienic precautions to preserve the body in a healthy condition, soon throw a fresh complexion upon the nature of the case. A few grains of calomel, some saline aperient, abstention from alcohol, and attention to simple hygienic details, soon obviate the necessity of nature lessening the arterial tension by using the uterine mucous membrane as a safety valve. The specialist here has had to rely upon his knowledge of general medicine in order to enable him to relieve the patient.

Not infrequently, patients are sent on for examination, where it is thought there must be some uterine disorder to account for the excessive losses at the menstrual periods, when the only lesion detected is some overlooked mitral incapacity, for which, unwittingly, stimulants have been ordered with no sparing hand.

The withdrawal or diminution of these, with the administration of digitalis, strophanthus or other similar remedy, and instructions as to regulating their mode of life, soon change the complexion of affairs, and lessen materially the menorrhagia, without any uterine treatment whatever.

"What is a good thing for menorrhagia?" is a question I have been repeatedly asked, until, really, I am almost tired of explaining that menorrhagia is only a symptom, and until we have found out the cause, treatment is liable to be worse than useless.

Again with dysmenorrhœa. This is but a symptom of many and various conditions, not only of the uterus and appendages, but also of the general health, and yet I am frequently asked, "What is the best thing for dysmenorrhœa?"

Any condition of the general health interfering with the due co-relation of the several functions, so as to produce anæmia, may be the exciting cause. Any abnormal condition of the uterus itself, or of the ovaries or tubes, may also give rise to dysmenorrhœa. A combination of two or more

of these conditions will of course, *pro tanto*, be more likely to give rise to it.

Before prescribing, therefore, for these cases, we must endeavour to form some rational conclusion as to what are the predisposing and exciting causes producing it.

Some case successfully treated, by some recent or forgotten drug, is published in the Journal, and straightway every succeeding case of dysmenorrhœa is treated by the same agent. I have seen instances of pain at the menstrual period coming on towards the climacteric age, due really to incipient malignant degeneration, treated by three-drop doses of tincture of pulsatilla.

Again, I have witnessed simple cases of dysmenorrhœa, due more to anæmia, imperfect nutrition, and improper clothing, where the patient has been gravely recommended to submit to some surgical operation, such as division of the cervix, or the wearing of a stem.

The tendency of gynæcology for many years past has been to advance in a surgical direction, and unquestionably much has been gained by this.

Cases which, scarce a generation ago, were regarded as hopeless, over which medicine had no power, either to control the growth of tumours, or prevent a fatal issue, are now rescued from their impending fate, and restored to health and usefulness. The triumphs of abdominal surgery are still the wonder of the age. Ovariectomy alone has been the means of saving countless thousands of lives. Removal of the uterine appendages, whether in the case of bleeding myoma or chronic incurable diseases of the ovaries or tubes, has enabled the surgeon to convert useless, suffering and miserable invalids into useful members of society, able to earn their own living, or to fulfil the duties of their station, with comfort and freedom from suffering. The surgical treatment of extra-uterine gestation, bold in its conception, and successful in its issue, appeals alike to the profession and the public. Shortening of the round ligaments; raising the prolapsed ovaries, and attaching them to the parietes by a plastic operation; repair-



ing the ruptured perineum; removing the hypertrophied cervix uteri; or restoring it to its normal condition, when laceration has occurred, by the operation of trachelorrhaphy; constricting the vaginal passage by colporrhaphy, when it has become so lax as to cause considerable discomfort, and allow the uterus to be prolapsed even beyond the vulval orifice; all these, and many other operations of a like nature may well be quoted as evidence of my original statement. Emboldened by the success attained by gynæcologists in their operative treatment, the general surgeon has ventured on abdominal section for tubercular peritonitis, for intraperitoneal injury, chronic intestinal obstruction, and other similar conditions. And yet, after all, it is not every case we are consulted about that can by any ingenuity be brought to a surgical conclusion. The triumphs of surgery are great, and not infrequently witnessed by many, whether in the operating theatre or as specimens exhibited at our meetings, but we hear little of the cases which have been safely conducted to a satisfactory issue in the quiet seclusion of the bed chamber.

In my winter wanderings in the sunny south, I came across an old trophy of a bye-gone age, in the shape of a cannon, upon which was engraved "*ultima ratio regum*"—the last appeal of kings—a symbol to my mind of what operations are in our profession. Before cannon are brought into requisition what an amount of diplomacy has been exerted to avoid the necessity of appealing to such noisy and often unnecessary means. Sir James Paget has well remarked that "the good that medicine and surgery may do is not half estimated by bills of mortality, which prove only an average greater length of life. More good is done by making a larger part of each life more fit for working; and in this may be a measure of utility such as may be unmatched in any other calling." Possibly, years hence, when gynæcology is systematically taught in our medical schools as an integral part of medical education, when conservative surgery has advanced further towards preventive medicine, we shall be enabled to prevent the development, or retard the progress

of numerous conditions incidental to the female sex, which now inevitably eventuate in surgical interference.

Our practice in many instances does not keep pace with our knowledge. As a fact, we know that the process of involution of the uterus, subsequent to delivery, takes at least six weeks under favourable circumstances, and still longer in anæmic, underfed, or unhealthy patients, where the hygienic surroundings are unsatisfactory. And yet we keep still to the traditions of the past, and allow our patients to get up after the ninth day, provided there is no hæmorrhage or elevation of temperature to suggest a more prolonged recumbency.

Can it be doubted that we have here a most potent factor in the production of uterine disorders? The heavy sub-involuted uterus not only drags upon the already weakened and distended ligaments and supports, giving rise to prolapsus, retroversion or other displacement, but also tends to remain in the same enlarged condition indefinitely; nor is this all, the ovaries are too often dragged down, and in place of remaining in a position of safety, become irritated and inflamed, and so cause considerable discomfort.

In case of premature expulsion of the ovum, so called miscarriages, the matter is still worse. The patient is allowed to return to her domestic duties within a few days, long before the uterus can have a chance of recovering itself, and thus much future suffering is entailed upon the patient, and a long series of uterine disorders induced.

The importance of taking extra precautions as to exposure to cold, or wet, or over-fatigue, at the times of the ordinary periodical congestion, which occurs monthly, is not often sufficiently considered. Many cases of dysmenorrhœa and menorrhagia are unquestionably due to want of proper care at these times.

Even the growth of myomata of the uterus, apart altogether from the more direct method of treatment, may be lessened or retarded by attention to numerous details as to diet and hygienic management, such as abstention from alcohol, lessening the amount of nitrogenous food, preventing congestion

of the pelvic organs by wearing appropriate clothing, and refraining from unnecessary fatigue or exertion at the ordinary monthly periods; regulating the bowels, administering ergot, and improving the tone of the general health by means of such remedies as quinine, arsenic, strychnia, and other agents of this class.

Many of our fair patients are in the habit weekly of confessing openly that "they have left undone those things which they ought to have done and done those things which they ought not to have done and there is no health in them"—without seeing the hidden meaning clearly intended to be understood of the people by the old divines who compiled our liturgy.

And yet if we strive to impress upon our patients that many of their sufferings are but the outcome and natural sequence of their daily habits, and could be obviated by attention to hygienic details, they are like the mighty man of valour, recorded in Holy Writ, Naaman, captain of the host of the King of Syria who, when told to go and wash in Jordan seven times and be clean, was wroth and went away.

He expected the prophet to come out to him, and call upon the name of his God and strike his hand over the place and recover the leper. Even the very argument he used: "Are not Abana and Pharpar, rivers of Damascus, better than all the waters of Israel? may I not wash in them and be clean?" is one patients are frequently in the habit of using—although possibly not in such striking language; and it is not until the silent voice of conscience, or the pleading of some intimate friend reasoning with them, "had the prophet bid thee do some great thing, wouldst thou not have done it? how much rather then when he saith unto thee 'Wash and be clean,'" that they can be persuaded to follow the example of Naaman, and do exactly what they had at first been bidden to do—wash and *be* clean.

In the study of gynecology, too much stress cannot be laid upon the extreme importance of forming a correct diagnosis. We should at all times endeavour to ascertain "the truth, the whole truth and nothing but the truth."

It is not necessary to confine one's attention to the *position* of the uterus, when possibly its *condition* is of far more importance. Nor should we rest content merely with detecting a retroflexion of the uterus, when it may be some old-standing pyo-salpinx or cirrhotic condition of the ovary is really the chief cause of the patient's suffering. How often has a conical cervix—the supposed cause of dysmenorrhœa and sterility—been divided, with an implied, if not clearly expressed promise, that this would remove all further suffering—when an overlooked “matting” of the ovaries and Fallopian tubes, from former inflammatory mischief, proved to be the real cause of the patient's discomfort. How frequently do we see instances, where the ovaries and tubes have been removed—and rightly so—for some long-standing pelvic trouble, and yet the condition of the patient some months afterwards is not anything like as favourable as we were led to predict. And why? because some chronic uterine trouble, co-existent with the ovarian mischief, has been overlooked or not attended to, and now interferes with the perfect convalescence of the patient, and robs the gynæcologist of his full measure of credit, and in some cases unquestionably brings the operation of removal of the appendages into needless discredit.

One almost needs to serve an apprenticeship to a bill discounter to enable one to estimate at their proper value the drafts on his credulity, which are often tendered for acceptance by patients as to the amount of pain they suffer. It would be well if we could invent a *dolorometer* to gauge precisely the character, duration, intensity or degree of pain.

Women, speaking generally, feel pain more than men do; patient as they are, they seem to have less reserve of force and less resistance, more susceptibility and resentment, and less capacity.

Some practitioners would appear to be almost colour blind before the more subtle shades of feeling, and to have the most hazy notions as to the degree of pain intended to be conveyed to their understandings by the statements of

the patients, being content to describe everything as a great pain. It may not be as big as a barn door, nor as deep as a well, but it still serves to wholly unfit the patient for any consecutive tax upon her powers.

Much has yet to be written upon the reflex symptoms due to uterine derangements. The synergic action between the stomach and the uterus, both as regards secretion, sensation, and motor action, are amongst the most remarkable phenomena of reflex nervous action. Nature gives us a very palpable illustration of this in the morning sickness of pregnancy. Bismuth, hydrocyanic acid, ingluvin, oxalate of cerium and other vaunted specifics are poured into the stomach, whose only fault is a too manifest sympathy with its suffering neighbour lower down, without producing any but a temporary relief to the vomiting. The application of a solution of cocaine to the cervix uteri, or of acid carbolic, nitrate of silver, or other appropriate remedy, or the introduction of a morphia suppository into the vagina, serves to relieve the troublesome sickness and enables the patient to retain nourishment.

In cases, however, of chronic metritis where nausea or sickness is a prominent symptom, we fail to notice the analogy between these cases and those just mentioned, and direct our efforts mainly to improving the action of the liver, or drugging the too sympathetic friend, before alluded to, in place of treating the diseased condition of the uterus, which is really the *fons et origo mali*.

Instances could be cited of patients suffering apparently from dyspepsia, where long diet lists and lengthy prescriptions, tried patiently for many consecutive months, and, in some cases, years, had failed utterly in affording relief, but whose dyspeptic symptoms were at once removed when the uterine trouble was attended to.

Mr. Henry Power in his recent Bowman lecture, "On the Relation of Ophthalmic Disease to certain Normal and Pathological Conditions of the Sexual Organs," has done good service in directing the attention of practitioners to this important subject.

He asserts correctly that in women the influence of the sexual system, in accordance with its more complex structure, its larger bulk, and much greater nervous and vascular supply, together with its wider sympathies, is much more profound than in the other sex.

The defective, excessive, or difficult and irregular discharge of the menstrual function is constantly followed by derangement of some part of the organism, and not unfrequently of the eye. Cases of amaurosis and albuminuric retinitis of pregnancy have probably been met with by many here; but it is well to remember that cases of interstitial keratitis, choroiditis, iritis, retinitis, optic neuritis, and other conditions affecting the structure of the eye may be the result of uterine disturbance.

Much attention has been directed during the last few years to the operative treatment of cancer, more especially of the uterus, and, although the results thus far are encouraging, we shall never be able, adequately, to cope with this terrible malady, until the practitioners scattered over the length and breadth of the land have their faculties quickened to appreciate the very earliest manifestations of the disease, and even to anticipate its advent by a more careful consideration of the predisposing causes which, where a strong hereditary tendency exists, are likely to eventuate in such a condition.

Sir James Paget, in his recent Morton lecture, encourages the hope that we may yet find some medicine as efficient against cancer as mercury and quinine are against syphilis and ague, especially as the recurrences of these diseases are less, not more, severe than the primary. Such a medicine we have not at present. Can it be reasonably hoped for? Yes, he answers, and the more so if we may count cancer among the specific diseases. Professor Clay, some seven years ago, asserted that he had discovered the long and anxiously-sought-for remedy in the form of chian turpentine. The interest excited in this treatment has to a very large extent subsided, and the hopes once entertained that at last the cure for cancer had been found have been surrendered, as failure after failure

with the drug in the hands of other practitioners was experienced and reported.

Only recently in one of our leading medical journals, Professor Clay himself reports *three* cases of cancer cured by this remedy. If this be all his charity can afford, his poverty must be great indeed. If it be really such a specific as he asserts, why have we not thousands of cases reported as cured, not an insignificant trio like this?

Surely the matter ought not to be allowed to remain any longer in its present unsettled and unsatisfactory condition. The remedy has been fairly tried in the cancer wards of the Middlesex Hospital, as have many and various vaunted specifics which have been brought before the public during the present century, and still Dante's motto inscribed above the portal in his "*Inferno*," *Lasciate ogni speranza voi ch' entrate*"—all hope abandon ye who enter here—might not inappropriately be placed over the entrance to the cancer wards in the Middlesex Hospital. If this drug had come out of the ordeal triumphantly, then should Clay occupy a position not inferior to Jenner or Harvey, as one of the greatest benefactors of our species, but if, on the contrary, it is wholly useless as a remedy, then let it drop into a well-merited and not too premature oblivion.

Paget has indicated the direction in which our minds should tend. He says "all cancerous diseases are apt to form in parts congenitally defective, and still more they follow injuries, sometimes very quickly. More commonly still they appear in parts that have long been the seats of some irritation, as we call it, as in the scars of burns, or in syphilitic tongues or gums, or cheeks irritated by bad teeth, or in lips irritated by pipes, or tongues by hot tobacco smoke"; and we might add to this list in *mammæ* where eczema of the nipple has been present, and in the cervix uteri from old standing laceration and irritation.

"*Principiis obsta*" must be our motto, find out and remove any and every source of irritation and thus lessen the risk of this dread malady occurring.

The proneness of the disease to attack the robust and strong, its insidious onset, its stealthy progress, the enormous importance of a correct diagnosis in the early stages of the malady, the extreme gravity of the issues at stake in its proper treatment, and the unerring certainty of its result unless successfully dealt with in its earliest stages, should all conspire to quicken our intelligence and give to the subject that earnest consideration which its importance demands.

Oh, the little less and how much it is,  
And the little more and what worlds away.

The subject of electrotherapy in gynæcology, recently brought prominently forward by Dr. Apostoli, is one that will not fail to attract considerable attention, and those who have the opportunity of carrying out this method will be doing us good service in recording their observations from time to time. So many communications upon the subject have been published recently in our medical journals, that it will be needless for me to attempt even to sketch the indications for the employment of electricity. Not only are we promised the dispersal of fibroid tumours and the arrest of hæmorrhage by its influence, but also the resolution of peri-uterine inflammations and the relief of ovarian pain, so as to preclude the necessity of removal of the appendages. Amenorrhœa, dysmenorrhœa and menorrhagia are amenable to its influence. The most obstinate pruritus has been cured by a single application. Constipation and dysuria have been rapidly relieved, after resisting the usual remedies. Those who have given attention to the subject speak most enthusiastically of its influence as a nerve sedative, and a stimulant, a muscle contractor, and anti-spasmodic, an anti-phlogistic and counter-irritant, a vesicant, a tonic and promoter of development, an absorbent, chemical cautery and escharotic, electrolytic, hæmostatic, and de-congestor. In fact we are forcibly reminded of the man who wrote an essay "*de omnibus rebus et quibusdam aliis.*" The programme is so vast, and the power of the agent so infinite, that sceptics are inclined to discount the statements made,



and to disbelieve in the utility of electricity at all. But there can be no doubt that when we have fully mastered the details and are in a position to give our patients the full benefit, without any of the risks attending its too intemperate use, electricity will prove of considerable value in the treatment of diseases of women. A society like ours offers unusual facilities for considering a subject like this, and I am pleased to tell you that an evening has been arranged for the discussion of this new method of treatment.

In the interests of gynæcology it would be well if those who have had the opportunity of studying the effects of remedies upon varying conditions met with in daily practice, would communicate the result of their observations. Not only does this apply to the effects of new remedies, but also to the influence exerted by well-recognised agents, the forms in which their best effects may be obtained and their deleterious action minimized. The list at our disposal is far too small, and our knowledge of their action far too inexact. Much could be done in this respect by careful clinical observation, recording minutely the symptoms and how these were modified or relieved, not by a combination of half a dozen different drugs, as is too often the case, but by some specially selected one, given with the definite idea of testing its true value under certain well-defined conditions.

I would here suggest that modern pharmacology offers us not only a far larger assortment of drugs, but a much greater variety in the mode of their administration than was formerly the case. May I further hint, in the interests of the patients, that it is well, whenever it can be so arranged, to leave the culinary department of the organism free for its intended purposes, and not convert it into a drug store for the reception of nauseating compounds. There are many and various methods of applying remedies directly to the locality affected, which should always be resorted to when feasible. Rectal and vaginal suppositories or pessaries, injections and enemata, hypodermic injections, local applications, whether as plaisters, fomentations or poultices, or applied to

a blistered surface, medicated baths and fumigations, or as local applications to the cervix uteri, may all be tried in appropriate cases.

Within the last few days I have seen a patient whose bowels were so intractable, that she had frequently taken as many as ten purgative pills without obtaining the desired relief, where the injection of merely one drachm of glycerine into the rectum accomplished the object sought "*tuto, cito et jucunde*" within a few minutes. The influence of this small quantity of glycerine is marvellous—I have tried it in the most varied cases and found it invaluable. Let me commend it to your attention, in the interests of many long-suffering and much-physicked patients.

Why in painful pelvic disorders, opium or morphia should still be administered by the mouth, I fail to realize. Morphia suppositories, either vaginal or rectal, will generally serve to allay the pain, and leave the stomach free to digest nourishment.

I am certain that in many critical cases, where the life of the patient often hangs upon her powers of assimilating nourishment, we do much harm by drugging the stomach with opiates unnecessarily and unreasonably. We first impair the digestive capacity of the stomach by drugs, and then attempt to convert the rectum into a stomach by injections or suppositories of peptonized materials.

Although, as a rule, I seldom prescribe plaisters, considering their application uncleanly and unnecessary, I am bound to confess that in some cases of backache, which medicine fails to relieve, and other conditions of so-called ovarian neuralgia, a belladonna or some stimulating plaister proves of much service. I can call to mind an instance of one of the leading surgeons of London, who shortly before his death was much troubled with so-called muscular rheumatism of the shoulder. An appeal from one to the other of his medical colleagues, and a resort to all the usual medicaments prescribed in such cases failing utterly to afford the least relief, he took upon himself the responsibility of applying an ordinary plaister, which removed the pain at once.

May I suggest to those whose opportunities of operating are few and far between, and who, therefore, are not in a position to present us with "specimens," that they would confer a real benefit upon the Society by presenting brief, but at the same time careful and exact, notes of the action of drugs under varying conditions, and in well-defined cases. Fellows of this Society, engaged in the busy routine of every-day practice, have opportunities of watching the effects of medicines too often denied to those who are practising as pure gynaecologists. We prescribe medicines, but it is not always that we are enabled to record whether these have accomplished the object intended, or whether they have failed entirely to afford relief. If successful, patients do not deem it worth while returning merely to inform us of the result; perchance one grateful patient may now and again inform us of the success of our venture, but we feel inclined to ask were there not ten that were healed, but where are the nine?

Not long since I met at a social gathering a lady who reminded me that some ten years ago she consulted me for "distracting neuralgia" of several months' standing, which no one she had consulted had been able to relieve her of. It so happened that the prescription I gave her acted like a charm and the neuralgia was soon a thing of the past. In mentioning the subject to me she further added, "I should think I must have given copies of that prescription to at least twenty people, and it has never failed"—a strange way, I thought, of showing gratitude—but yet had it not been for my meeting her accidentally, I should never have learned what a valuable remedy I had prescribed, nor what a miserable return I had received for my prescription.

There are numerous drugs constantly being submitted to the profession, whose action requires careful watching, under many and varied conditions, before we are in a position to estimate their real worth. This the practitioner has unusual facilities of doing, and if he would only submit the result of his observations to the Society from time to time, it would prove of much value and interest.

Antipyrin is a remedy that bids fair to prove of great service in our special department. M. Chouppe has shown that it tends to relieve the pain caused by the uterine contraction, which is caused by ergot, without diminishing the contraction. He believes that it acts upon the spinal cord, and might be administered with advantage during parturition to women of an irritable temperament. I have given it in cases of dysmenorrhœa, where no definite uterine disorder existed, and have met with sufficient encouragement to induce me to try it more extensively. It seems to act in some cases more like bromide of potassium, allaying nervous irritability, relieving pain, and encouraging sleep.

Given with a view to diminishing the temperature in puerperal conditions, it has proved very satisfactory, and well deserves further trial. In megrim and other nervous conditions it has been highly spoken of, and I commend it to your attention for careful study, in the hope that some one amongst you will give us a report upon his experience of the drug, before my term of office expires. I mention antipyrin, but there are numerous others worthy of your consideration, and deserving of a fair trial.

"Tempora mutantur et nos mutamur in illis." Hot douching and glycerine tampons have had their day, and now we are recommended to try the dry treatment in gynæcology.

One of our foreign fellows, Professor Engelman, of St. Louis, in the June number of the *American Journal of Obstetrics*, contributed an exhaustive paper on the subject, which does not seem to have met with the notice which the importance of the subject demands. I have been trying it recently and find in some cases the method is exceedingly useful, and for this reason I venture in a few words to direct your attention to it. In place of glycerine, powders, such as bismuth, iodoform, boracic acid, borax, alum, tannin, oxide of zinc, soda and others are employed. These are applied either by the aid of an insufflator or blower, or incorporated in cotton wool tampons, or placed bodily in the

vagina and kept in by means of a tampon. The tampons are allowed to remain in for thirty-six to forty-eight hours.

The pressure of the tampon affords an excellent support to any prolapsed ovary, which will not bear the pressure of a pessary, diminishes the venous congestion of the pelvic organs, keeps the uterus in a normal position, and also lessens the strain upon the ligaments and vaginal walls, thus affording opportunity for the tissues to recover. Where excessive secretion from the vagina or the vaginal portion of the cervix exists, the influence of bismuth and boracic acid is really surprising. Cases which ordinarily take several weeks to improve by douchings and applications, can be cured effectually in a far shorter time by the dry process. I desire only to draw attention to this now, but shall hope to give a more detailed account later on.

And now, gentlemen, I will bring my remarks to a close, for I have already trespassed too much upon your patience and attention. Much has yet to be accomplished in gynæcology before we can sit down satisfied that we have learnt all that is necessary, and have attained to such skill in diagnosis and treatment that we have nothing more to desire. Only by patient, systematic, painstaking record of our experience can we hope to increase our knowledge of this special subject, and thus be enabled to mitigate or prevent the diseases incidental to women. Ordinary faculties exercised with vigilance, and in an honest, independent, enquiring spirit, are certain of some measure of success, and often of a large measure. Nothing is denied to well-directed labour, nothing is to be attained without it.

Dr. BANTOCK proposed a vote of thanks to the President for the able address they had just heard. This was carried by acclamation.

The Society then adjourned.

*THE BRITISH GYNÆCOLOGICAL SOCIETY.*

WEDNESDAY, FEBRUARY 8, 1888.

ARTHUR W. EDIS, M.D., F.R.C.P., IN THE CHAIR.

PRESENT: 36 Fellows, 8 Visitors.

The following were elected Fellows of the Society :—Dr. G. D. Mackintosh, Dr. C. H. Barkley, Dr. G. R. Adam.

The following were proposed for election :—Dr. Edwin A. Neatby, London; Dr. Hamilton, Tenby.

The PRESIDENT said that, contrary to the usual custom, he would first call on Dr. Aveling to read a paper on "The Diagnosis and Electrical Treatment of Early Extra-uterine Gestation," after which Mr. Lawson Tait would show a remarkable collection of specimens bearing on the subject before the discussion on the paper of the evening was commenced.

*The Diagnosis and Electrical Treatment of Early Extra-uterine Gestation.* By JAMES H. AVELING, M.D., Consulting Physician to the Chelsea Hospital for Women.

NOW that misplaced pregnancy is receiving considerable attention, I am happy to have the opportunity of saying a few words in support of the electrical treatment of this deathful accident. It is remarkable the apathy with which such a successful mode of dealing with ectopic gestation has been received in Europe. Although first suggested by a Frenchman, and first practically carried out by an Italian, to the Americans is due the credit of having popularised and estab-

lished, beyond controversy, the efficacy of the electrical treatment of extra-uterine gestation.

Notwithstanding the fact, that it is more than thirty years since electricity was first purposely<sup>1</sup> employed as a foeticide, it received little attention until Dr. J. G. Allen related, in 1872, to the Philadelphia Obstetrical Society, a case in which he succeeded in arresting an ectopic pregnancy by Faradization. Some Americans, including Dr. T. G. Thomas, attribute the whole credit of this mode of treatment to Dr. Allen, but to this he is not entitled. Rachetti was the first to employ it. Dr. Braxton Hicks used it in 1866, and to him is due the kudos of being the first to suggest the adoption of vaginal and abdominal electrodes, instead of puncturing the sac with needles. It is disappointing to think how near Dr. Hicks was to perfecting and establishing the proper plan of treatment. A little more perseverance, and he would have saved his patient's life and secured another splendid addition to his already great reputation. Time will not permit me to speak of the numerous cases published by American gynaecologists in which tubal pregnancy has been arrested by electricity. They may be found in the transactions of the American Gynaecological Society, and in the American *Journal of Obstetrics*. In this country, however, the literature of the subject is so scanty that I may refer to it to show how little we have understood, appreciated, and benefited by the work of our American brethren.

After Dr. Hicks' case the electrical treatment of extra-uterine gestation seems to have slumbered with us until 1883, when Dr. Matthews Duncan, assisted by Dr. Steavenson, used it. The pregnancy had arrived at the fifth month. Dr. Steavenson began well. He used the Faradic current and vaginal and abdominal electrodes, but he allowed the current to pass for only two seconds, and then stopped for intervals of a minute and a half. This did not cause the death of the

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<sup>1</sup> Dr. David Davis mentions a case in which death of a four months' fœtus was caused by electricity.—*Obstetric Medicine*, 1836, 4th p. 317.

foetus, and the reason will be evident when I explain later on the way in which I believe electricity acts as a foeticide. This plan failing, he next tried galvano-puncture. Two needles were introduced, and a current from forty cells was passed for six minutes. The effects of this was, Dr. Duncan says, "tremendous." At the post-mortem, for the woman died a few days after, the foetus was found with the bones extensively laid bare, the tissues in a great part dissolved, and the heart hardly recognisable.

Last year another case was recorded in which the fatal galvano-puncture was employed. Dr. Percy Boulton, advised and assisted by Dr. Steavenson, was the operator. The tubal pregnancy had existed for about two months, and it was a most suitable case for electrical treatment. These gentlemen seemed to think they were acting upon the plan generally adopted by American gynæcologists, but they were mistaken, for no counterpart of such a formidable operation as was then employed can be found in the medical journals of America. Three needles, of improper metal, were inserted, and used with the positive pole of a thirty-cell constant-current battery. This was like using a steam-hammer to drive a tin tack. Experience had already shown that in most cases a moderate Faradic current was sufficient to kill the foetus in early gestation, and that the employment of such strong means was quite unnecessary. The mother died, and now Dr. Boulton is converted to the use of the Faradic current.<sup>1</sup>

I am exceedingly anxious that another eminent gynæcologist should be converted to the use of electricity in these cases, for I fear his uncompromising opposition may delay the use of it in this country. Mr. Lawson Tait has not given as much attention to the ante-rupture stage of ectopic gestation as to the post rupture period. The brilliant results of

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<sup>1</sup> It is to be regretted that Dr. Apostoli should have advised the use of electro-puncture in these cases, but he acknowledges it to be only a suggestion, he has never employed it.--*American Gynæcological Trans.*, vol. 12, p. 305.



the operation for dealing with these cases, when death from laceration and hæmorrhage is imminent, has dazzled and blinded his eyes to the necessity of adopting a plan of treatment which will prevent these fatal ruptures. I would if possible rob him of the professional satisfaction he derives from performing these operations, but above all I wish to remove from his mind the strong feeling of opposition which he has expressed against the electrical treatment of misplaced pregnancy, for I am convinced, from what has been done in America and from my own case, as yet the only successful one in this country, that by electricity we may rescue from almost certain death all those women in whom the accident has been detected early.

Now what are Mr. Tait's objections? The year before last at the Brighton meeting of the British Medical Association, a discussion took place upon some cases of extra-uterine gestation. The report in the *Journal* says:—"Mr. Tait offered objections of the very strongest kind against the use of the electric current in such cases, because he considered it as one of the most nonsensical proposals which had ever been submitted to a surgical audience." His reasons for this opposition were:—

First: "Out of all his experience he had never yet been called upon to make a diagnosis in tubal pregnancy before the rupture of the tube." Now in this Mr. Tait has had an exceptional experience, for of the twenty-one cases of ectopic gestation mentioned by Dr. T. G. Thomas, sixteen were diagnosed before rupture and only five after.

Second objection: "There were no symptoms in tubal pregnancy until rupture was established." Here is an astounding statement, and one which Mr. Tait over and over again contradicts in his writings. In the *Transactions* of the Obstetrical Society of London, Vol. 15, may be found a paper by him "On the Diagnosis of Extra-uterine Pregnancy." He acknowledges that, when rupture has taken place, 85 per cent. of the cases may be correctly diagnosed, and how? chiefly by the symptoms before rupture; and yet, according

to him these do not exist. He says, "The real clue to the nature of the case was a history of sterility for some considerable time, the arrest of menstruation for weeks or even months, and a sudden access of pain and collapse, with repetitions of these attacks." Mr. Tait has here given a graphic description of the prominent symptom of tubal pregnancy before rupture, and yet he says there are no such symptoms. In a letter to Dr. Harris, of Philadelphia, in which Mr. Tait asks that his strong objection to the treatment of extra-uterine pregnancy by Faradization may be made known in America, he says, "that a correct diagnosis will not be made probably more than once in three times." This admission proves that Mr. Tait's opinions on the subject are in a transition stage, and that we may hope for a further satisfactory development of them. Granting the diagnosis of ectopic gestation to be difficult, why should this difficulty be urged as a reason for discarding electrical treatment? How often would Mr. Tait open the abdomen if he only did so when he was able to make a positive diagnosis?

Third objection: "To apply the electric current to every kind of pelvic lump under the suspicion that it was an extra-uterine pregnancy, would be a most haphazard dangerous proceeding worthy of the strongest condemnation." It has never been proposed that electricity should be applied to every pelvic "lump," but it may be confidently asserted that moderate Faradization would do no harm to any pelvic tumour capable of being mistaken for ectopic gestation. Dr. Garrigues says, "If the diagnosis of extra-uterine pregnancy can be made early with certainty, or if, in doubtful cases, the probability points in that direction, the treatment is electricity." Gynæcologists may, therefore, gaze complacently on this bug-bear of Mr. Tait's, and confidently employ the electric method without fear of disaster.

Fourth objection: "He has heard quite enough of the stories of the subsequent histories of cases where such diagnosis had been made, and where the electric current had been used, to justify him in using the strongest kind of con-

demnation which he could utter." Mr. Tait leaves us to imagine these histories. I have met with none except the two I have related. But this vigorous protest is interesting, inasmuch as he admits having met with cases "where diagnosis had been made," which answers his

Fifth objection: "He did not know any one who had ever asserted that he had made a diagnosis of tubal pregnancy before rupture had taken place."

The sixth objection is, that "The destruction and death of the child was of no consequence at all: the organ which could not be destroyed by the electric current, but which would go on growing and would go on bleeding when it was torn, was the placenta." Mr. Tait has quite recently repeated this objection in another place. He said "What was the use of destroying the foetus by electricity, as the placenta continued to grow, and it was not the foetus that was a source of danger, but the placenta."

Morgagni first pointed out that the maternal portion of the placenta might continue to grow after the death of the foetus, and this growth, as Spiegelberg has pointed out, depends upon hypertrophy of the decidua and its prolongations. Neither in my own case, nor in any other treated by electricity, have I seen or read of any after growth of the placenta, and I challenge Mr. Tait to quote one published case in which such growth has taken place. I can at the present moment refer to more than twenty cases of ectopic pregnancy treated by Faradization, and in every one the report states that the tumour began to get smaller directly after the treatment, and gradually diminished until it became the size of a walnut, or a plum, or disappeared altogether. Not a word about the continued growth of the placenta, which appears such a huge obstacle in the eyes of Mr. Tait. This being the case, we may, I think, decline to share his apprehensions, and conclude that, even if such after growth were possible, it must be exceedingly rare, and certainly not of sufficient importance to deter us from using electricity in these cases.

Finally, Mr. Tait says, "His greatest objection is, that supposing the foetus has passed through the stage of tubal rupture and remained alive, what right have you to murder that child?"

The answer to this objection is obvious. It is a recognized axiom in obstetric practice that the life of the embryo or foetus must be sacrificed when it is necessary to do so for the mother's safety; and in spite of his objection this is also Mr. Tait's opinion, for at a meeting of the Royal Medical and Chirurgical Society, he said, "As a rule operative interference should be had recourse to, as soon as the diagnosis of extra-uterine pregnancy has been made, and if the foetus were living, it would not be wise to wait until it had reached the age of viability." It would seem, therefore, that he does not object to "murder" the child himself at any period of its existence short of viability.

With the exception of a fear, which proved groundless, that electricity might cause contraction and rupture of the cyst, these objections to the electrical treatment of early extra-uterine gestation are the only ones with which I have met. I must leave the Fellows to determine how potent they are, and how desirable it is that they should be allowed to arrest the practice of a simple, safe and efficacious operation, by means of which one of the most serious accidents befalling women\* is deprived of its terrible power and fatal effects.

I shall now pass on to the more practical part of my paper, and briefly consider the best methods of diagnosing and treating early tubal gestation.

*Diagnosis.*—At the outset I may say that I have invariably found writers who have least studied the symptoms of early ectopic pregnancy, to be the most emphatic in asserting the difficulty and impossibility of diagnosing it. Dr. Parry wisely remarks, "a more extended clinical experience will probably show that the existence of misplaced gestation can be detected quite easily, if not more easily than normal pregnancy in its early stages." Difficulties do and

must always exist, but a comprehensive grasp of the history, and attention to the objective and subjective symptoms of each case will in most instances leave little doubt as to the nature of the abnormal condition under examination. If this be true, it must be remembered that as our means of detecting extra-uterine gestation increase and improve, so also, in proportion, must the responsibilities of the practitioner; for, upon his promptitude and skill in making an early diagnosis, may depend his reputation and the life of his patient. The earlier the diagnosis is made out, and the sooner treatment is commenced, the more satisfactory will the result be.

Laparotomy is an excellent and life-giving operation after rupture has taken place, but one in four, to whom this accident occurs, dies so rapidly from internal hæmorrhage, that medical assistance cannot possibly arrive in time to save the patient. Any practitioner who meets with a case presenting the history and subjective symptoms of ectopic gestation should insist upon an examination, and endeavour to clear up his doubts by making a physical exploration of the pelvic organs.

The history of a case of misplaced gestation is of great importance and should never be overlooked. It will be found very frequently that there has been a period of varying length, prior to the occurrence of the accident, during which the patient has remained sterile. Sometimes she may never have been pregnant, or she may have given birth to many children. As a rule, however, erratic pregnancy is found to occur most frequently during a prolonged sterile period following a first confinement; and I may here record my belief that the accident is most commonly caused by injuries sustained or disorders produced by first labours. Another important point in the history of these cases is that the patient generally believes herself to have been for some time pregnant, and that there is something unusual about her condition.

Although it has been maintained that ectopic gestation

can be discovered when it has existed a fortnight, it is not probable that the medical man will be called upon to diagnose the condition until it has been progressing for at least four weeks. At the end of this time a most characteristic symptom frequently appears, and medical assistance is sought.

*Pain.*—In the diagnosis of early extra-uterine gestation we have no more reliable guide than the peculiar agonising paroxysms of pain which accompany it. They are unlike any other abdominal pains, but are described as being similar to cramp or colic. They are felt in the hypo-gastric or iliac regions, and they double up the patient, throwing her into a state of extreme prostration, collapse, and cold, clammy perspiration. The characteristic pain may occur at a catamenial period, or after exertion of any kind; and it is supposed to be caused by contraction of the foetal cyst. If this be true, rupture must be imminent every time it occurs, for unfortunately one violent paroxysm succeeds another, and after only an interval of a few days, the poor victim again suffers tortures which drive her to the very verge of death with their intensity. These pains are best treated by heat, morphia, and chloroform, but the latter must be used with great care, for struggling during its administration, or vomiting after it, might determine rupture of the cyst. The knee-elbow position has in some cases been found to relieve the suffering.

*Symptoms of Pregnancy.*—If the pain now described be due to ectopic gestation, the ordinary supervening signs of conception will be noticed—the usual gastric disturbances and mammary changes, the cessation or scanty appearance of the catamenia, the deepening of the vaginal hue, and disorder of the vesical and rectal functions. Ballottement, the absence of the uterine souffle, and contractions of the uterus—valuable as diagnostic signs when the pregnancy is further advanced—are not available during the early period which we are now considering.

*Metrorrhagia* is an important symptom in extra-uterine pregnancy. It may be continuous or only appear at irregular intervals. Everything which escapes from the vagina should

be carefully examined, for decidua may be expelled, and the discovery of this is a significant fact. The membrane may be discharged entire or in minute shreds, but in whatever condition it is cast off, it should be carefully preserved and submitted to microscopic examination.

*Pelvic Tumour.*—The foregoing symptoms having rendered a vaginal examination absolutely necessary, the practitioner will, if the case be one of misplaced pregnancy, discover a rounded, elastic, tender tumour, behind and to the right or left of the uterus. If watched for a few days it will be found to be rapidly increasing in size and vascularity. When considered with the history and symptoms of the case, I know of no other pelvic tumour with which it could be confounded.

*The Condition and Situation of the Uterus* provide us with other valuable diagnostic information. The uterus will be found enlarged, its os soft and patulous, and its cavity, if examined by the sound, elongated and empty. The uterus will also be discovered displaced, and pressed by the tumour against the front of the pelvis. To make a satisfactory examination of the tumour and uterus it may sometimes be necessary to give the patient an anæsthetic.

*The Treatment of Early Extra-uterine Gestation.*—Laparotomy after rupture of the tube is a necessary and life-saving operation, and it was successfully performed forty years ago by Dr. Clay, of Manchester, but the object of all treatment should be to prevent rupture, and thus render the more dangerous operation unnecessary. No one would think of waiting until an aneurismal sac had burst before he used means for arresting its progress. I shall confine my observations to the use of electricity in these cases, for I believe it to be a method of treatment superior, in every way, to all others. As far as my reading goes, I know of no case in which it has failed, when properly applied. It may certainly be used with every chance of success during the first four months. As to its employment later than this, experience has not yet given

any definite answer. There can be no doubt, however, that the earlier it is had recourse to the better.

A satisfactory diagnosis having been made out, the foetocidal effects of electricity should be promptly employed. Fortunately no large and expensive battery is necessary, for a moderate interrupted current is in most cases all that is required. Nor is any great manipulative experience required. Certainly anyone capable of making a diagnosis by examination would find the electrical treatment comparatively easy. This cannot be said of the rival method of treatment by laparotomy, for Mr. Tait, describing the operation says, "Adhesions occur to every one of the pelvic viscera, and there can be little doubt that, for *success* in dealing with them, very considerable experience with the finger tips will always be necessary, for it can only be after prolonged acquaintance with the sensations which are conveyed by different structures to the fingers that the adherent tube and placenta can be recognised from coils of intestines, broad ligament and uterus." If, as Mr. Tait says, very considerable experience with the finger tips is always necessary to insure success in dealing with extra-uterine gestation by laparotomy, how many are there who will venture to undertake the operation?

Before going further, let me here make a few remarks upon the mode in which electricity causes the death of the foetus. At present there are two theories held; one that the foetus is killed by electrolysis; the other that death is due to nervous shock. My belief is that, although both these methods may be possible, the mode in which destruction of foetal life has been usually and most successfully effected, has been by tetanic contractions of the foetal heart due to the repeatedly broken current of an induction machine.<sup>1</sup> This theory, which I have not seen anywhere suggested, explains why Dr. Braxton Hicks and Dr. Matthews Duncan failed. Neither of them used the interrupted current long enough. The action upon

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<sup>1</sup> If this theory be correct, the primary coil of the battery would be most efficacious.



the foetal heart was only transient ; time was given for it to recover from its spastic condition. To be effective, the current should be as strong as the patient can bear, not turned on all at once, but gradually increased to that point. It should be continued for at least ten minutes, and repeated every day until the effects upon the tumour become evident. These effects, which confirm the accuracy of the diagnosis, are, cessation of pulsation, diminution of resistance, and reduction in size of the tumour, and, besides these, retrograde changes in the breasts and retiring of cervix uteri from the pubis.

In a case which I treated a short time since, with the details of which I shall not trouble you, as they have been published in the *British Medical Journal*, December 4th, 1886, I used Gaiffe's induction machine, and only half its power was employed. The negative electrode was applied to the most prominent part of the cyst through the vagina. (It may be found convenient to pass this through the rectum in some cases.) The positive electrode was placed on the abdominal wall opposite the tumour. No pain or inconvenience was felt after the applications. They were only four in number, for, on the fifth day, when I was prepared to repeat the Faradization, I found such a marked change in the cyst that I felt convinced gestation had been arrested. This proved to be true, and the patient is now in perfect health and no trace of the tumour can be felt.

As I have before said, we are indebted to our American brethren for having popularised this method of treatment, and I cannot do better than conclude by giving you the opinions arrived at by two of the best authorities on the subject in that country.

Dr. Thomas, after an experience of twenty-seven cases of ectopic gestation, says : "The growing triumphs of abdominal surgery are apt to lead to the conviction that laparotomy should, as a rule, be the procedure of election in these cases. From this view I unqualifiedly dissent. In the electrical current we appear to have an infanticide agent of reliable

character, and, as in the woman, as Leopold has proved to be the case in the rabbit, the retained fœtus seems to be readily dealt with by the absorbent process of nature, this should, in the early months of pregnancy (I should say up to the fifth month), be preferred to the more radical and dangerous procedure of laparotomy."

Dr. Garrigues, who, after recounting the various plans proposed, or carried out, for treating early extra-uterine gestation, says: "Against all these dangerous or doubtful methods stands electricity, with a record unblemished by a single failure or any dangerous consequences. It has been used in quite a number of cases. The pregnancy has been promptly interrupted, and every single patient has definitely recovered within a short time. This success has been so uniform that it seems the time has come to put it down as an axiom based on experience that in the early part of pregnancy electricity is *the* remedy, and that it is the duty of the physician to give his patient the benefit of its application."

Such are the conclusions of physicians who have employed the electrical treatment and have thoroughly informed themselves of all that has been done by others in the same direction; and against these strong opinions and this incontrovertible evidence we have, at least in this country, but the opposition of one surgeon, who, without practical experience of the subject, ventures to denounce the electrical treatment of early extra-uterine gestation as a "most nonsensical proposal."

I think Mr. Tait is rather overstraining one of his eyes, I mean the one with which he views laparotomy. I believe it to be a real sorrow to him that every disease to which flesh is heir cannot be cured by this operative treatment. It is quite true that success can only be attained by working heart and soul at one subject to the exclusion almost of every other, and the whole world is indebted to Mr. Tait for advances in abdominal surgery which have resulted from his genius, courage, and skill; but I would like him, now that he has achieved his triumphs, to give that laparotomy-eye a rest,

and, using the other, gaze with some complacency upon an alternative plan of treatment which is safe and satisfactory and does not demand exceptional manipulative skill.

Mr. LAWSON TAIT said he would begin by replying to Dr. Aveling's paper, and though he was very grateful to him for his complimentary remarks, he would assure him that he was not so much in the habit of using one eye as Dr. Aveling seemed to think. He had listened most attentively to all that Dr. Aveling had said, and with one exception he was entirely of the same opinion as he was before. With reference to the exception, he was not quite sure about it, because on that and other abdominal subjects it was quite impossible for him to carry in his mind the detailed statements of everything he had written on the subject. The point to which he alluded as an exception was the quotation given by Dr. Aveling of what purported to be drawn from a paper read by him before the Royal Medical and Chirurgical Society, in or about 1874, upon a case of extra-uterine pregnancy which he had operated upon successfully a year before. Dr. Aveling said that he then held a different view of the value of the child's life to what he did now. So far that was perfectly true; he did not then recognize the right of the child to life as he now did; but he would qualify that statement with the belief that if Dr. Aveling had completed the contest he would find that the difference was not so great as he seemed to think. If he (Mr. Tait), really did say, on the occasion referred to, that "if the foetus were living it would not be wise to wait until it had reached the age of viability," then what he had said was wrong and he withdrew it. In all the papers he had written on the subject during the last six or seven years he had never said anything about ectopic gestation at any time previous to the incident of rupture, and that because he had only seen one case prior to rupture. His own notions had been so upset by the evidence of others that he deliberately refrained from expressing any opinion until he was enabled to settle, to his own satisfaction, what his opinions were.

He insisted on the fact that he had only seen a single case of tubal pregnancy before the date of rupture. The woman came to him a few weeks ago in the ordinary course of out-patient practice, with symptoms of obscure pelvic pain, *of several months' standing*—in short, with the usual symptoms of tubal disease. She was examined, and they came to the conclusion that it was a case of gonorrhœal salpingitis, and so clear were the symptoms that he used the case to demonstrate to his pupil, Dr Ricketts, the nature of the symptoms in that disease. That was on a Monday. On the Thursday following she turned up again with the most acute symptoms—she was bent double and could hardly walk. Finding that the whole floor of the pelvis was fixed in one mass, she was at once admitted. The next morning he opened the abdomen and found—a ruptured tubal pregnancy, than which nothing was less suspected. He defied anybody to have diagnosed such a case beforehand, for the woman had not even named a period.

His paper on the diagnosis of extra-uterine pregnancy in 1877, quoted by Doctor Aveling, was based upon a mistake and applied to the pregnancy at full time. He had been reading a paper, which had just appeared, upon the subject by Professor Koeberle of Strasburg, and the first case he saw that day curiously enough presented all the symptoms of extra-uterine pregnancy at full time. She was operated upon and recovered, and a few days later another woman came in with a large abdominal tumour, which he diagnosed as an ovarian tumour. She turned out to be the cousin of the other patient. She gave a story of suppressed menstruation—rupture about the thirteenth or fourteenth week; shock, fever, pain, with apparently a false labour at the end of nine months; nevertheless it turned out to be an ordinary ovarian tumour. Here then he spoke of diagnosing over the whole period of extra-uterine gestation, and not, as Dr. Aveling intimated, previous to time of rupture. What he asserted was that no diagnosis could be depended upon before the date of rupture. One might guess, but it was impossible to affirm.

As to the danger to be apprehended from the continued growth of the placenta after the death of the foetus—supposing it to be killed by electricity—he did not intend to say anything about it until he had had more experience on this head. His remarks applied to tubal pregnancy at the time of rupture, and to that only, and he maintained that a medical man who was called in at such a time, knowing what could be done and did not operate, would be guilty of positively disgraceful conduct. The operation, doubtless, was none too easy, but the first step was to open the abdomen, ligature the broad ligaments, and then one could pause to consider what more was to be done.

He was discussing, at the meeting at Brighton, the treatment of tubal pregnancy after rupture and nothing else—not rupture into the broad ligament and the continuance of the pregnancy—and whatever other people were discussing, his remarks were confined to that. He therefore repeated what he said then, that to apply a galvanic current with such hæmorrhage as occurred in these cases was the most nonsensical proposal ever made.

DR. AVELING interposed with the remark that the discussion at Brighton was on papers—his own among the number—dealing with the electrical treatment of extra-uterine pregnancy.

MR. TAIT (continuing). Be that as it might, his (Mr. Tait's) remarks applied only to tubal pregnancy at or after rupture. When a man said he had treated a case of early tubal pregnancy by electricity successfully, he dissented. He would show his specimens in support of what he advanced, and it was not every tumour that was diagnosed as an extra-uterine tumour that was really so.

As to the result of the employment of the battery of forty cells, "the bones of the foetus being extensively laid bare, the tissues in a great part dissolved, and the heart hardly recognizable," it was really too absurd to put that down to the effect of the current. When rupture took place, he often found a macerated foetus<sup>1</sup> "with bones extensively laid

bare." In that case the foetus must have been dead for weeks before the current was applied.

He was in a difficult position, because, to illustrate his contention, it would be necessary to allude to cases with which he was acquainted, which had been operated upon by friends of his across the Atlantic, and as he had already been pounced upon for alluding to unpublished cases, he preferred to refer Dr. Aveling to his authority, Dr. B. Wiley, of New York.

Coming back to the growth of the placenta, the cases he had seen were those in which he had found a macerated foetus, not more than ten or twelve weeks old, while the placenta was the size of a four months' pregnancy. Dr. Berry Hart had noticed the same thing, and he had a section given to him by Dr. Hart, to prove it. Mr. Knowsley Thornton also confirmed the statement.

He said it was asking too much to accept those twenty cases alluded to by Dr. Aveling, which disappeared after treatment, as cases of tubal pregnancy, and then ask him to disbelieve what he had seen with his own eyes, and had been confirmed by Berry Hart, Knowsley Thornton, and others, as to the growth of the placenta.

He would observe that in respect of the life of the child, the opinions of the Society had altered a good deal of late years. They did not destroy children now with the same facility as they did some years ago. He denied their right to kill a child in that way. Out of fifty children skilfully treated, and allowed to go on towards term, he believed that there were great chances that *all* the children, and most of the mothers, might live, by proper surgical intervention at the opportune moment. Of course, this conclusion would not be arrived at if we judged from the catalogue of horrors published by Dr. Harris, a list absolutely misleading and worthless.

Dr. INGLIS PARSONS said that the placenta continued to grow after the death of the child, in some cases; but even if that were the case, it did not follow that the placenta could

continue to grow if the child had been killed by electricity. The force that could produce the death of the child would not be likely to leave the placenta untouched. It was, of course, an open question. He was not aware that any case treated by electricity had been brought forward to be operated upon afterwards, on account of the continued growth of the placenta. He quoted the paper of Dr. Garrigues, containing twelve cases where the diagnosis had been made by the most eminent men without any subsequent trouble, from the placenta. Even supposing the placenta did go on growing, there was plenty of room for it in the pelvis, and if it did arrive at full growth, the same sort of thing might be repeated, as sometimes occurred with an abdominal gestation, viz. :—a false labour, quiescency, and atrophy.

Mr. LAWSON TAIT observed that if the child were killed, there was no guarantee that the tube would not rupture.

Dr. PARSONS (continuing). It was possible, but did not follow that any symptoms would ensue, even if the growth went on. With regard to the kind of electricity to be employed, Dr. L. Smith had published a case in which he used, on several occasions, a constant current of 125 milliampères, without producing any effect, the child continuing to live. That seemed to show that electrolysis did not have any effect on the child, and it was quite consistent with what they knew of its action. The probability was that death was produced by shock, and the choice lay between the constant current, slowly interrupted, and the Faradic current. There was, of course, this disadvantage, that the contraction of the abdominal muscles to which the latter gave rise, increased the tension of the sac, and with it the chances of rupture.

Dr. RUTHERFOORD said that there were two or three objections to this method; in the first place, up to the fourth month, and even up to the third, its use was extremely dangerous, and he quite agreed with Mr. Lawson Tait that before that date the diagnosis was extremely difficult. They could not be sure that they had to deal with a case of extra-uterine gestation. He thought the Faradic current was distinctly

dangerous. The muscular coat of the tubes was augmented in quantity, and therefore the risk of rupture was serious. Nobody who had seen a fibroid treated with the constant current would doubt that there was tremendous contraction. Alluding to a case of extra-uterine gestation, recorded in Mundé's Journal, the sac ruptured, and it was ascribed to the contractions caused by the current. Apostoli had seen contraction taking place with the constant current, and even the Faradic current might conduce to the same result. He questioned Dr. Aveling's assertion as to his having made out a diminution in the size of the sac under treatment. If the Faradic current were employed at the fourth or fifth month, when the sounds of the fœtal heart could be heard, and if, after treatment, they ceased, then they would be entitled to claim that the treatment had so far been successful; but Dr. Aveling had spoken of a case at two months, when, of course, no such proof was available.

Dr. IMLACH said his experience of extra-uterine gestation would show how very advanced their opinions had become to what they formerly were. One case occurred in 1872. It was under the care of one of the most experienced gynæcologists of his time at Edinburgh. The patient was admitted to the Royal Infirmary at Edinburgh, and remained there some months. They listened day after day, week after week, for the sounds of the fœtal heart, and at last they were heard. The patient had passed through the terrible ordeal of the third and fourth months when the chances were so much in favour of her dying. There was a living child and a living woman, at full term, now, laparotomy would be performed; then, however, the matter was put off, and at last, *horribile dictu*, they plunged in a long tube to try and draw off the liquor amnii. Nothing came, and the child did not die, so they injected morphine, and still without success—the child would *not* die. Days passed again, and at last the great gynæcological surgeons said they would have to remove the child by laparotomy. A little more delay and then they came to the conclusion that it must be done—they were actually going to



do it the next morning, but unfortunately the woman died the preceding evening. If such a thing were to happen now it would justly be considered disgraceful.

Dr. Aveling had their sympathies entirely because he wished to help them, and they all wished to avoid unnecessary laparotomies. He agreed with Mr. Lawson Tait that when they performed laparotomy after rupture, at four or five months, they generally found a macerated foetus. He asked what happened inside the uterus when the foetus died—miscarriage followed by expulsion. He maintained that precisely the same thing happened in a tubal pregnancy. As soon as the child died or was killed, the tube endeavoured to discharge its contents, and as it could not possibly pass into the uterus, the tube was ruptured. It seemed to him that the cases they had read of extra-uterine pregnancy were not strong enough to warrant their acceptance. If they killed the foetus they were doing the best they could to bring about the very thing they wished to avoid. Let it go on to full term or until rupture, and then operate at once. He did not wish any harm to electricity, but let them reserve it for cases of fibroid tumours, salpingitis, &c., and not try it in extra-uterine pregnancy. Laparotomy could always be performed, almost without danger, so that there was really no excuse for killing the foetus. He considered it to be an absurd piece of meddlesome gynæcology.

Dr. W. JAPP SINCLAIR said that he doubted the possibility of diagnosing the early stage of tubal pregnancy before rupture. Without unmistakable diagnostic marks of the condition there could be little use in collecting cases of cure by electrolysis. Whether the tumour was due to tubal pregnancy or not, it might disappear under treatment, but still the case was "not proven" as to the efficacy of electrolysis in tubal gestation. If the treatment was applied in the latter stages of tubal pregnancy, the foetus might be killed, but a tumour remained containing the dead foetus, and the placenta which might have to be got away by an operation as dangerous as laparotomy would originally have been. Now, with regard

to diagnosis in the earlier stages, Dr. Aveling had mentioned some symptoms on which he relied, but he (the speaker) could not but think that Dr. Aveling's generalisation was premature and on too narrow a basis. His own experience of the early stage, so far, had been that there were no symptoms before the rupture took place. In three cases, with the details of which he was familiar, there were absolutely no symptoms before rupture, and in two of these cases even after rupture the symptoms were such as to draw the attention of the practitioners, who were first called in, away from the pelvic organs altogether. He concluded that with such present knowledge it was absolutely impossible to arrive at a perfectly reliable diagnosis beforehand. He could call to mind several cases at present or very recently under his care, which simulated tubal pregnancy; in two of them the tumours were adherent to the pelvic floor, and he incised from the vagina with the most satisfactory results. He must say that as far as the diagnosis of tubal pregnancy in the early stages, and the treatment of it by electrolysis or laparotomy, his opinions differed, *toto calo*, from those of Dr. Aveling.

Ten o'clock having arrived, the PRESIDENT put it to the meeting whether the discussion should be continued then or not.

Dr. ROBERT BARNES observed that it would be impossible to complete the discussion in half-an-hour, and he therefore moved the adjournment of the discussion. He hoped Mr. Lawson Tait would be enabled to leave his specimens.

The motion was seconded by Dr. ROUTH, and agreed to *nem. con.*

Mr. LAWSON TAIT said he could not undertake to bring back all the specimens again. He asked permission to say a few words in reference to one of them which, at a first glance, looked like an ovary, but which was really a ruptured tubal pregnancy. This was a case in which no preliminary symptoms were observed; the woman was suckling her youngest child at seven months; she had a good constitution, no previous illness. On November 2nd, at 1.30 p.m., she was taken

suddenly ill with pains in the abdomen, followed by vomiting and faintness. The doctor was called to her the same afternoon, the pain was relieved by Battey's solution, and death took place at 9 p.m. It was only within the last twenty minutes of her life that her medical man had any suspicion of what had taken place. This was the earliest case on record—being at the end of the first month, though there were plenty at eight, nine and ten weeks.

Dr. ROBERT BARNES proposed, and Dr. ROUTH seconded, a resolution that the discussion be adjourned until the next meeting. This was carried.

The Society then adjourned.

*THE BRITISH GYNÆCOLOGICAL SOCIETY.*

WEDNESDAY, FEBRUARY 22, 1888.

ARTHUR W. EDIS, M.D., F.R.C.P., PRESIDENT, IN THE CHAIR.

PRESENT: 37 Fellows, 12 Visitors.

The following were elected Fellows of the Society :—  
Dr. E. A. Neatby, Dr. Hamilton.

The following were proposed for election :—Dr. George Henry Aiken, California, U.S.A.; Dr. John Hasard, London; Dr. Arthur W. Mayo Robson, Leeds; Dr. Arthur Henry Wyborn, London.

Dr. ROBERT BARNES said, in resuming the discussion on the important subject of extra-uterine gestation, I may be permitted in the first place to say that Dr. Aveling's paper was a very able pleading for the application of one particular mode of treatment. But it must have struck some of us also that his argument was very much that of a special pleader who feels that the best way to make his case good is to ignore every other element but the one he wants to establish. He seeks to prove the value of electricity in the treatment. But this is a very narrow and limited part of the great question before us. To arrive at a useful estimate of the value even of this method, it is still necessary to extend our survey beyond the small class of cases in which electricity can find application. This must be my apology for inviting the Society to come back to the larger questions at issue.

We must, then, look at the subject of ectopic gestation as a whole. It is only in this way that we can form safe deductions as to the pathology and therapeutics of particular cases.

I will, in the first place, express my personal gratification that the term "ectopic," which I first proposed some years ago, to replace the term "extra-uterine," has met with all but universal acceptance. It has a more comprehensive meaning, and is at the same time more accurate and less compromising. If Mr. Tait's contention be admitted—that all ectopic gestation is originally tubal, we might as well at once use the term "tubal." But that is open to the objection which vitiates so many definitions, that it begs the question, and assumes that our knowledge is complete. I am not prepared to assert absolutely that there is no such thing as primary abdominal gestation, although I have expressed my doubt as to its occurrence. Still, comparative physiology lends some support to the affirmative conclusion. And I think there is satisfactory evidence of the occurrence—rare, indeed—of primary ovarian gestation; and the tube-ovarian variety can hardly be classed as strictly tubal. I concede the essentially tubal character of the interstitial variety.

*Causes.*—Etiology is often the best guide to pathology, and certainly it is to preventive treatment. As to prophylaxis, I am afraid in this case etiology cannot help much. If, again, Mr. Tait's contention that desquamatus salpingitis is *the* probable cause, it is not clear that we can do much in preventing or curing salpingitis, except by removing the tubes—a perfectly legitimate proceeding in the case of diseased appendages. But my own experience does not justify me in accepting the proposition as explaining even the majority of cases of tubal gestation. A more comprehensive explanation will, I think, be found in the general statement that the cause lies in obstruction to the onward progress of the ovum to the uterus. It is remarkable that a considerable proportion of cases of ectopic gestation have occurred in association with fibroid tumours of the uterus, sometimes blocking the orifices of the tube, sometimes by distorting the relation of parts; other cases are found associated with distortions of the uterus from flexions; others with inflammatory adhesions of the uterus or tubes; others

from pressure upon the tubes from various causes. I believe tubal gestation is most frequent on the left side. This may be explained by the greater liability of the left tube to pressure from accumulation in the sigmoid flexure. I have formed a provisional opinion that ectopic gestation is more frequent in women exposed to hard work, in whom it may be supposed that pressure upon the tubes is more likely to act. But upon this I do not insist.

It is worth while to make the incidental observation that these cases of ectopic gestation prove that impregnation does not take place in the uterus, but that the fortuitous concourse of atoms, male and female, the coalescence of spermatozoa and ovum is effected in the tube or on the ovary. And analogy with lower animals even supports the hypothesis that the elements may meet and unite whilst wandering in the peritoneal cavity, each seeking its mate.

As to the treatment of salpingitis, it is not undeserving of recollection that Tyler Smith proposed, and, I believe, practised catheterisation of the tubes. Clearly, if we could get at the tube as we do at the cavity of the uterus, we might expect to accomplish like results from topical applications.

The study of the *march and symptoms* leads more directly to the practical question of treatment. What is the usual course of a tubal gestation? The event that strikes us most forcibly is the rupture of the sac, attended by hæmorrhage into the peritoneum and collapse, *sometimes* fatal. This indeed makes an impression upon the mind so strong as to throw every other issue into the shade. Some people think this cataclysonic rupture is the only, or nearly the only, issue. It occurs generally before the twelfth or thirteenth week. The catastrophe is sometimes sudden and overwhelming; at other times, there is a stage of rallying which may even issue in spontaneous recovery. And there is reason to believe that in some cases the rupture is not effected at one stroke, but that the crushing one may have been preceded by minor partial rents. A condition that favours and seems to me to give warning of the impending rupture, to which I long ago

drew attention, is the hæmorrhage which so constantly precedes it. This hæmorrhage is probably due in some cases to preliminary partial detachment of the ovum from the cyst-wall, promoted by the congestion of ovarian stimulus, emotion or physical exertion. The blood which appears externally comes partly from the uterine wall as in ordinary menstruation, partly from the cyst; and it is in the highest degree probable that some blood escapes from the fimbriated end of the tube into the peritoneal cavity before rupture of the cyst takes place. This appears to have been the case in one case related by me, No. 6, in which there were signs of ordinary fibro-uterine hæmatocele some days before the final cataclysm ensuing upon rupture of the cyst.

Tubal abortion like uterine abortion most occurs at menstrual periods, when the nervous and vascular tension have reached the maximum intensity. At this time the vessels of the sac and of the placenta are in the acme of turgescence. They more readily give way. And there is another factor not generally recognised. The growth of the ovum is too rapid for the accommodation afforded by its unnatural nidus. Its rate of growth exceeds that of the tubal sac. It shoots out beyond the limits of attachment; and hence under the turgon of menstruation, the first hæmorrhagic effusion. An analogous process occurs in placenta previa, a cognate form of ectopic gestation. In like manner effusions of blood into the peritoneum attend some cases of uterine abortion, and in some cases they may be the consequence of bursting of hæmatosalpinx, or from the turgescient vessels during menstruation, especially in the obstruct forms of dysmenorrhœa. I have narrated cases of all these kinds. Diagnosis from tubal gestation must be sometimes impossible without direct inspection. Ruysch, Haller, Brodie, Trousseau and others believed that blood, menstrual or lochial, could flow back from the uterus into the peritoneum.

There may I believe be abortion of a tubal gestation analogous to uterine abortion, which may end in recovery. We cannot of course estimate the number of such cases.

Upon this point it may be useful to cite the opinions of Schröder. Premising that the bursting of a tubal gestation leads to severe hæmorrhage and profound collapse, he says, this only exceptionally leads to death. In many cases the bleeding arises either from weakening of the heart's action or from pressure. With care, fatal issue is as a rule avoided; the subjects recover with unexpected quickness; the numerous lymphatics of the peritoneum quickly absorb the blood. Fatal peritonitis, he says, is exceptional. Recovery again may ensue from death of the embryo. Although this view is too optimistic, I have certainly seen clinical illustrations of Schröder's propositions.

In the interstitial variety the solution by uterine abortion may be expected and even aided. I have recently seen such a case in the neighbourhood, in which three of us in consultation had arrived at the opinion, that the case was one of tubal gestation. I held myself in readiness to operate; but eventually the fœtus, of four months about, was dragged through the ostium uterinum, and all went well.

Now comes the great question of *diagnosis*, which governs that of treatment. We must begin with the earliest stage. Mr. Tait contends that the diagnosis in the early weeks is all but impossible; but then he admits he has rarely or never been called upon to make it. He does not practise obstetrics. He comes on to the scene as Jupiter, or Apollo, to rescue from the cataclysm. Lucina is nothing to him. Now I maintain that the diagnosis may be made of tubal gestation with reasonable certainty, before the fœtal heart can be heard, even at seven or eight weeks. Dr. Sinclair has very well said that there must be subjective symptoms to indicate recourse to examination; but I demur to his statement that there are no symptoms before rupture. I will point them out. All ectopic gestations, including that marked by placenta prævia, tend to end by abortion. Abortion commonly is heralded in by premonitory symptoms. In the case of early tubal gestation, there is commonly arrest of menstruation. By itself this is not worth much, but if attended by sickness and the other



subjective signs of pregnancy, the presumption of pregnancy, as yet in favour of uterine pregnancy, rises. If examination is now made, we get objective signs of great value. The dark violet coloration of the vagina and vaginal portion, added to increased bulk of the uterus, make up a body of cumulative evidence, all but conclusive, still in favour of uterine pregnancy. But it will be asked, how does this apply to the detection of tubal gestation?

A word as to the continued life and growth of the placenta after the death of the embryo. In exceptional cases of uterine gestation, I believe this does occur, and in those cases in which the placenta undergoes myxomatous degeneration, there can be no doubt of it. I am not aware of any instance on record of this degeneration being observed in tubal or abdominal gestation.

Of the two constituent elements of placenta, the foetal certainly dies with the foetus, but the maternal or decidual may maintain a modified vitalified growth. But I am not aware of distinct evidence of this survival in cases of death of the embryo in very early tubal gestation.

What are the signs that call for special examination? There are two very decided indications where the pregnancy is abnormal. These are, first, pains more or less acute in the pelvic region, of a spasmodic character; secondly, more or less hæmorrhagic discharge from the uterus and vagina. These are signs of abortion. It may be of uterine gestation. But they call for local exploration. Then we shall find the uterus not in the normal medium position, but pushed across the pelvic brim to one side; on the opposite side we shall feel an extra-uterine swelling of an ovoid shape. The two tumours, uterine and extra-uterine, diverge from the vaginal roof. The size of the uterus itself may or may not, more probably does not, equal that of the estimated stage of gestation. If all these conditions have developed within a short period in a subject hitherto free from symptoms of pelvic distress, the case for tubal gestation rises to more than suspicion. But if the symptoms are not urgent enough to call for active in-

tervention, we get the opportunity of making comparative observations. In a week or two we may find that the extra-uterine tumour has increased considerably. This strengthens the case for tubal-gestation. Now, under the conditions described, pain, hæmorrhage, an increasing tumour in one side of the pelvis dislodging the uterus, danger threatens. If, with the uterine hæmorrhage, shreds of decidual membrane are cast, the case for tubal gestation is all but complete. The process of abortion has fairly set in. In the case of uterine abortion we might safely wait, aiding nature according to her indications. But nature's course in the case of tubal gestation is to burst the sac, and that may be fatal. Now, at this point, we may avert rupture by puncturing the sac, thus relieving tension by draining off the liquor amnii and any blood that may have been effused into it. This almost certainly involves the death of the fœtus, if, indeed, this event has not already happened. This treatment, and rest, is often enough, but it is also the opportunity for galvanism. I have no personal experiences of this proceeding, but, with my present knowledge, I prefer simply tapping the sac, and proceeding to ulterior measures according to circumstances. We should here obey the maxim, "*principiis obsta.*"

Now let us take the next stage of tubal gestation, assuming that the subject has as yet escaped the catastrophe of rupture. She has passed the first risk of abortion. There may have been moderate effusions of blood, but these have been dealt with safely by natural processes. The sac grows, and it finds room by developing in Douglas' pouch, pushing the uterus forward and the rectum backward. The uterus will now be in the medium line, but jammed close behind the symphysis pubis, and there is a larger mass projecting below the level of the vaginal portion. Sometimes, however, a degree of one-sidedness is maintained. At this stage, say at four months' development, and, *a fortiori*, later, electricity can do no good. It may, on the contrary, do harm, by usurping the place of effective treatment.

At this stage, even, opening the cyst by the vaginal-

roof may be effective. Liquor and blood drain off, and, if a sufficient opening be made, the fœtus may be extracted through it. The placenta may be left. It is more likely to undergo gradual atrophy, even absorption, than to grow.

After four and five months, cataclysmic rupture becomes less probable, but the fear of it cannot be dismissed. The sac will contract adhesions with the contiguous structures, and, from a tubal constitution it will probably, by partial opening, develop into a so-called abdominal form. This brings us to the question so strenuously urged by Mr. Tait, that we ought to respect the life of the fœtus, and stand by on the chance of extracting this child when it has arrived at maturity. Certainly as time goes on, a process of accommodation goes on, and the gestation may not only proceed to the term of maturity, but, the fœtus dying, it may be retained an indefinite time, undergoing conversion into the so-called lithopædion—a term which I have shown to be inaccurate. But can we count upon either of these events? Is it justifiable, on the questionable prospect of the fœtus pursuing a healthy course of growth, to let the mother run the serious risks of carrying a fœtus under such abnormal conditions? It is living under a suspended sword of Damocles, that may at any unforeseen moment destroy both mother and child.

Here, as in many other cases, the safety of mother and fœtus are indissolubly linked together. If the mother dies by sudden rupture of the sac or other catastrophe, the fœtus dies with her—and thus both are lost. But if we remove the fœtus by operation, we remove a cause of danger to the mother. If, again, we have such a case under observation, namely, a woman carrying an ectopic fœtus, we must admit that there is danger for the mother. And if we are compelled to select between the possible rescue of the child, and the very probable loss of the mother, the question forcibly surges up—Which life shall be sacrificed? Surely the decision must be in favour of the mother. The case is stronger than that of Craniotomy *v.* Cæsarian Section.

I now venture to sum up the question of treatment in the following propositions :—

1. The treatment to be adopted must be governed by the nature of the case, by the urgency of the symptoms, and especially by the stage of development of the gestation.

2. In the early stage, before bursting of the sac, electricity to kill the foetus may be applicable; but simply puncture of the sac is better.

3. When signs of rupture of the sac, with manifest signs of hæmorrhagic effusion, shock and collapse have set in, no time should be lost before opening the abdomen and tying the pedicle, and, if possible, removing the pregnant tube.

If the primary effects of rupture have been tided over, and a fair degree of tolerance have been gained, it may be enough to treat the case as one of simple retro-uterine hæmatocele, by puncturing more or less freely the sac behind the uterus, and leaving in a drainage-tube. This plan I have adopted with success.

4. When the stage of danger of cataclysmic rupture has passed, laparotomy should be performed as soon as the condition is recognised, not waiting for the maturity of the foetus.

5. Lastly, I would submit that when in the presence of urgent or threatening symptoms, a doubt arises as to the course to pursue, the decision should, as a rule, be in favour of opening the abdomen, and going straight to the seat of mischief. An error of diagnosis is of less moment in emergencies of this kind, than running the risk of letting an unknown morbid process work out its course. It matters little to the patient if her life be imperilled by the-bursting of an ectopic gestation-sac, or by some other condition causing rapid hæmorrhage into the abdomen or pelvis. In either case it is the duty of the surgeon to save her if he can. Laparotomy certainly offers the best chance in either case. The position is one, not rare in medicine, in which the same remedy is indicated in different diseases. Therapeutics is often more simple than Pathology. Precise diagnosis is not necessary to justify laparotomy.

Dr. ROUTH said that certain points had not been touched upon, although so far, he cordially adhered to all that had

been said by Dr. Robert Barnes. The first and most important question was to make out a correct diagnosis. Now the symptoms of extra-uterine gestation were, 1st, arrest of menstruation, with other signs of pregnancy. But he pointed out as a remarkable circumstance in connection with this arrest, that after the first two or three months, it was succeeded by menorrhagic shreds of membrane—decidua—coming away, which can be verified by the microscope. Then, 2nd, there were the spasmodic pains alluded to by Dr. Aveling at the times when the menses should have come on, though these were not conclusive evidence. 3rd, Dr. Barnes and also Dr. Aveling had laid stress upon the *rapid* growth of the tumour which, when observed, possessed great significance. No other tumour found in these parts was capable of such rapid growth. 4th, The uterus itself was larger than normal, usually prolonged upwards, the cavity admitting the sound freely, and itself pushed out of the mesial line, *i.e.*, toward the opposite side to that in which the tumour existed—the os yielding the usual soft and velvety feel of pregnancy. 5th, No reference had been made to the possibility of detecting the uterine *souffle*, which might be heard as early as the sixth week if sought for in the proper manner. Frequently, while it could not be heard by the stethoscope through the abdomen at all, it could be heard distinctly in the vagina by means of the vaginoscope, which should be used in every case of ectopic pregnancy for diagnosis. The vaginoscope which he exhibited was a double stethoscope terminating in a glass tube which could be easily passed into the vagina as a speculum, and often made directly to abut upon the tumour. Although a sound like a uterine *souffle* might be heard in certain cases of fibroid tumour, with a little care it was easy enough to distinguish between the two; for the latter must be much larger than an extra-uterine of three months before it would give rise to the same full sound again. Fibroids were less moveable than an extra-uterine sac, which could be freely displaced. They need, therefore, with these fine points made out, not be in so much doubt in arriving at a diagnosis.

*Secondly.*—Supposing they were satisfied as to the existence of an extra-uterine pregnancy, what were they to do? What would Mr. Tait do if he were called in before rupture had taken place? Would he operate at once?

The diagnosis was, according to that gentleman, all but impossible in these early conditions; he must of necessity wait before he could perform laparotomy.

*Thirdly.*—Referring to the method of treatment, he was glad to find Dr. Barnes had mentioned puncture of the sac. Now he (Dr. Routh), had shewn in another paper, that puncture by a trochar was often dangerous to life, as it might lead to the admission of air, and death had followed its use. With the aspirator, however, this danger could be avoided. With this instrument also, opium could be injected into the sac, which was always very fatal to the foetus contained, and would thus help in arresting the pregnancy.

*Fourthly.*—Coming to the employment of electricity, Dr. Routh said, that they were much indebted to American practitioners for their knowledge of what electricity could do. They were told that it did not matter what current was used provided it was strong enough. There was, however, one class of cases in which, apart from killing the child, it might bring about a delivery *per vias naturales*. He referred to those cases of tubo-uterine or interstitial ectopic pregnancy. Seven such cases are recorded. Two are given by Parvin, as recurring in the practices of Peesch and Maschka; one by Mr. Grün, two by Dr. Alexander Hay, and one by Dr. Bantock. The last occurred to himself and, with the other notices, were published last year in the medical press. In Peesch's case and in his (Dr. Routh), the foetus was forced by the electric current from the tube into the uterine cavity, and so passed out *per vias naturales*. There could be no doubt that electricity was an engine of the utmost power, but hitherto its use had caused so much suffering that they had been unable to utilise it to its full extent. At present, although such a proceeding had been ridiculed by some gentlemen in the North, this difficulty was removed by the

employment of artist's clay, as the transmitting abdominal medium. With this medium it was possible to use electricity easily, and no foetus could withstand 200 milliampères. Confining his remarks to one within three months old, he referred to a case in which three needles used as the positive pole had been introduced into the sac for electrolysis with a fatal result to the mother. In the report of this case, it was stated that some difficulty was experienced in withdrawing these needles. This was probably due to the oxidation of the metal. Had these needles been used as negative electrodes, although more destructive in their action to the foetus, this oxidation would not have occurred. If used as a positive pole the metal he would prefer would be gold or platinum. In any case he thought that electrolysis was unnecessary, if the electrodes were placed one within the uterus, and the other on the abdomen on the nearest point to the foetal sac. Electrolysis was more dangerous, Dr. W. H. Baker, of Boston, having instanced three cases of death after the use of needles in the case of fibroids.

*Fifthly.*—It had been stated that using a strong current of electricity such as would kill the child, would also injure the mother, and perhaps kill her too. This was a mere bugbear. He said that no instance was on record of the life of the mother having been lost from too strong a current so used; as to the life of the child, they should ask themselves whether they would not rather consent to sacrifice the child in the interests of the mother. Supposing they had to decide in the case of someone dear to themselves, would they hesitate to intervene to save the lives of their wives, &c. Even he thought that Mr. Tait would hesitate before this *argumentum ad hominem*. It was true, that abroad and in Roman Catholic countries, they believed if a woman died in childbirth she was a saved soul, and so they sacrificed the life of the woman for that of the child. But in this country we did not so interpret Scripture. He maintained that they were never justified in risking the mother's life for that of the child. In all cases up to three months he thought it would be well to aspirate or try electricity.

*Sixthly.*—Supposing we were called to a case where rupture had occurred, then, indubitably, the abdominal section should be performed. Here Mr. Lawson Tait had achieved great success, and all would concur in the plan he recommended. But even here the question presented itself: should the placenta be removed or left *in situ*, the cord only being tied? Was it safe to leave it—would it grow? Now here, he (Dr. Routh,) believed a great deal depended on imagination. He had never heard of a case in which the placenta grew after the child had been killed by electricity, or having died naturally, remained in the sac, it might be for years. He certainly had read of cases in which the placenta had been left, and the patient recovered and no growth of placenta followed, as in Mr. Jessop's case. In others again, it had been removed entirely or partially, and death followed from hæmorrhage. He asked Mr. Tait what he would do if the placenta were extensively adherent to the intestines, would he remove it, as Mr. Mattheison had done? (Mr. Tait intervened to say that he should certainly remove it, and had already done so.) Dr. Routh thought much would depend on the extent of the adhesions. It only remained to allude to cases of ventral pregnancies, also ectopic. If seen at a late period, and viable, no doubt he should say operate, and God bless you for it; but, if not viable, he would not think it right to so act till it became so, and allow the mother to be sacrificed for the sake of the child. He should think it his duty to kill the child, whether by electricity or puncture up to three months, after that remove it by abdominal incision.

Mr. LAWSON TAIT expressed his indebtedness to the Royal College of Surgeons, Guy's Hospital, St. Thomas's Hospital, and the Queen's College for permission to bring together the extremely interesting collection of specimens. He said that Dr. Routh was mistaken the other evening in alluding to a specimen of ovarian pregnancy, which he said was there. It was a case of tubal pregnancy. Personally he did not believe in ovarian pregnancy, and had never been able to meet with a case, those reported as such turning out



on examination to be something else. He called attention to one specimen because the case was one which was very simple, and yet very difficult. The woman came to him in a condition of collapse. She was married, thirty years of age, and had several children. Some weeks ago she was seized with violent pains just about the time when she expected to be unwell, but there was only a slight show. She was unwell again subsequently at irregular intervals, and then for three days she suffered from extreme pain. She was operated upon and recovered. Nothing in the history, in the way of arrested menstruation, even suggested pregnancy, yet the distended tubes could be easily made out, as the patient was very thin, and there could be no doubt as to the hæmorrhage.

His experience was exactly opposite, in most cases, to that of Dr. Routh, as to the arrest of menstruation followed by hæmorrhage. The history given by the patient, moreover, was often most delusive. The other specimen from a case of Dr. Braxton Hicks was remarkable on account of the well-marked pedicle, showing how easy the operation might be.

Dr. EDIS said that Dr. Aveling had raised a question of very great importance. One who had probably seen more of these cases than any other man—Mr. Tait—had utterly denied the value of the history from a diagnostic point of view, but there were certain symptoms almost invariably in these cases. He (Dr. Edis) was not speaking merely from book lore, for he had operated on one case a few weeks ago, and had several others under observation. He had, therefore, given the subject a good deal of attention. No two cases were exactly alike, but there were certain symptoms that might be relied upon. The first was that, as a rule, the patient distinctly missed a period, it might be only delayed to six weeks instead of a month, but it was missed. In any case there was some peculiarity in the catamenia. Moreover, the patient *thought* she was pregnant, not perhaps on account of menstruation, but on account of certain subjective symptoms and feelings. Then, during the first few weeks there was almost sure to be cramps referable to the

hypogastrium or one or other iliac fossæ. In the case he had alluded to, the patient, a housemaid, while carrying a tray down stairs, had a sharp pang and became collapsed. This pain may occur, disappear, and then recur. Then there was the hæmorrhage from the vagina. In one case he was called in to see a patient who was said to have miscarried at the sixth week, he was even shewn what was said to be the "miscarriage," but this turned out to be a piece of the decidua. He examined her, and found something pushing the uterus on one side, and this something was an extra-uterine foetation. In these cases, too, the uterus was larger than usual, and was pushed over to one side by an elastic, semi-fluid bag. He remarked that though it was stated to occur more frequently in the left side, his own cases had all been on the right; of course no one symptom pointed to extra-uterine gestation, but when they got a number of these symptoms they could proceed to a diagnosis by elimination. As a rule, the tumour was more or less fixed, it was retro-uterine in Douglas' pouch, but in the early stages it might not fall as low in the pelvis, and consequently it may escape the examining finger. A point which should never be overlooked was examination per rectum. In Germany they rapidly dilated the urethra, and in this way, with another finger in the rectum, ascertain the contour and position of all the pelvic organs. As regards these cases, although everyone might not feel equal to dealing with them, they ought at any rate to diagnose them. The discussion would not have been without utility if it brought this to the notice of the general practitioner. They must call in all their senses to aid in the diagnosis, sight, touch, hearing, &c.

Dr. Aveling had opened up the question as to what they should do when they had made their diagnosis, and as to whether, and with their present knowledge of electricity, they were justified in utilising it for the purpose of destroying the life of the foetus. He thought the facts before them were not sufficient to warrant a clear expression of opinion. His own impression was that if anybody for whom he had a regard, had

an ectopic gestation, he would not recommend her to be electrified, but would prefer opening the abdomen and removing the mass at once. The cases in which dead fœtuses had been left for long periods of time inside the body without giving rise to symptoms were very exceptional, and the electrical treatment might be the means of causing the very mischief which they were endeavouring to avoid. The subject must be considered to be *sub judice*. They ought to be very anxious to spread abroad a knowledge of the symptoms of extra-uterine gestation. As regarded tapping the cyst, he had no personal experience, but he quoted from Parry, who said long ago that a man would be a criminal who tapped a tubal pregnancy unless he were prepared to go on with the operation and remove it. It could hardly be regarded as a safe operation.

Dr. HEYWOOD SMITH said that notwithstanding the greater part of the discussion had turned upon the diagnosis and pathology of extra-uterine pregnancy, yet it was of the highest importance that an influential society as theirs was, should, both for their own sakes and for the sake of countless practitioners, consider and formulate some agreed line of treatment. He was reminded of a paragraph in the papers a day or so ago where, referring to the illustrious patient at San Remo the correspondent said there was perfect harmony among all the doctors as to the line of treatment to be pursued, although there had been considerable divergence among them as to the diagnosis; and he went on naïvely to remark that he had hitherto thought that the treatment of a malady usually had some reference to its diagnosis.

He (Dr. Heywood Smith) thought it was odd that the majority of the speakers at the last meeting, and also a leading article in the *Medical Press* of that day, seemed to imply that the diagnosis of ectopic gestation was impossible in its early stage; he was glad, therefore, to hear Dr. Barnes and Dr. Routh draw attention to valuable points in this particular. He did not wish to delay the Society by going through the various diagnostic points, but he would just remark that with regard to menstruation alone differentiation ought to be easily arrived

at between physiological and pathological cessation. If a woman's menstruation was regular, its sudden cessation, if not due to a cold, shock, or other tangible cause, might presumably be set down as the result of impregnation, especially as in most pathological conditions, where it is present, the oncoming of amenorrhœa is gradual. This symptom, together with the mammary signs, and a lateral pelvic swelling, increasing and producing pain, should, at least, put the practitioner on his guard for further evidence.

With the view of elucidating the subject of treatment in ectopic gestation, he thought it would be helpful to divide its consideration into three stages: (1) the pre-rupture stage, (2) the stage of immediate post-rupture, and (3) that which he might be allowed to call paulo-post rupture.

Inasmuch as hitherto, the second stage (that of primary rupture) has usually proved fatal, and would, in severe cases, continue to do so, unless the abdomen were at once opened and the seat of lesion removed, it stands to reason that, whenever the first stage is diagnosed, the pregnant tube should be removed, so that the woman should not be exposed to the risk of rupture. It seemed to him that to kill the fœtus by aspiration or electricity was bad practice, as it exposed the woman to the possibility of subsequent mischief from the presence of such a foreign body as the shrivelled débris of her child.

With regard to the treatment of the third, or paulo-post rupture period, there would be the additional factor of the life of the child to consider. In the former stages this consideration was of less moment, as of course the mother's life was of infinitely more value than the possible production of a future soul for the secondary life within her. But where the woman had survived the stage of rupture (and he had watched a case many years ago that entirely recovered after rupture), and the child was growing and becoming viable—

[Here the President intimated that Dr. Heywood Smith was travelling beyond the scope of the discussion in entering on the question of the treatment of ectopic gestation.]

Dr. HEYWOOD SMITH remarked that, although others had

made observations on the treatment, yet he bowed to the ruling of the chair.

Dr. FANCOURT BARNES said that Dr. Routh had remarked that it was not necessary to remove the placenta, because in nine cases out of ten it would shrink and disappear. In support of this view, he quoted a case of abortion which he had under his care some time since. The foetus came away, but the placenta did not. Subsequently another foetus was expelled, and then two placentas, one of which, belonging to the first foetus, was shrunken and partially atrophied, while the other belonging to the second was fresh and recent. He thought that this observation bore upon the question of leaving the placenta inside.

Dr. BEDFORD FENWICK suggested that it would be a good thing if the Society appointed a strong committee to investigate the question, and draw up a schedule of symptoms, especially differentiating extra-uterine gestation from small ovarian tumours.

Dr. AVELING, in reply, said that some misapprehension had existed as to the scope of his paper. Some Fellows had appeared to think that he advocated the electrical treatment at every stage of gestation, but that was not so. He thought the speakers at the last meeting might be divided into *electrophobes* and *laparophiles*. To show how absurd was the apprehension of danger resulting from the employment of electricity, he said it had been employed for seventeen years in America without a single case of death. In Dr. Bothwell's case, which had been alluded to by an electrophobe, death was due to rupture of a vessel on the *surface* of the sac eighteen hours after the use of electricity, and in the report it was stated that "electricity had probably nothing to do with the fatal issue." Electricity was only dangerous when improperly applied. Dr. Bothwell had treated twelve cases by electricity with "result entirely satisfactory, and he recommends it on account of its simplicity and its certainty." The laparophiles had two methods of arguing. One was as to the difficulty of diagnosis, but if what Dr. Barnes and Dr.

Routh had said as to the possibility of the diagnosis was correct, he need not take up their time in recapitulation. The other reason advanced was that they had no right to destroy the life of the foetus. Dr. Heywood Smith had done good service in pointing out the different stages. There could be no difference of opinion as to the propriety of sacrificing the foetus in the pre-rupture stage. In the pre-rupture stage, Dr. Aveling thought it was very difficult to suggest a better treatment than by electricity. Puncture of the sac had been proved to be a very dangerous experiment. He would like Mr. Tait to answer Dr. Routh's question as to what he would do in the pre-rupture stage if he had to treat such a case. He asked what should be done with a patient at term with a living foetus. Would Mr. Tait perform primary or secondary laparotomy? Statistics were very much against primary laparotomy at present, with the exception of Mr. Tait's statistics, which gynæcologists of the world were anxiously looking for in print. Other operators had had a terrible mortality, fifteen out of seventeen cases, but Mr. Tait had only one in seven. When Mr. Tait verified his figures and published his cases, then they might be obliged however to acknowledge that primary laparotomy was after all the more desirable. He was glad to be supported by Dr. Barnes in the possibility of diagnosis, and he fully agreed with all that he had said except in respect of puncturing the sac. He did not think that the death of the foetus was caused by electrolysis, but by the tetanic condition into which the heart was thrown by the passage of the induction current, and no great current was required to do this. Since reading his paper, he had been informed by Mr. Greig Smith that Dr. Blackwood, of Philadelphia, had adopted the tetanic theory as to the cause of foetal death by electricity.

Mr. TAIT, at the request of the President, said a few words in reply to questions. He congratulated the Society upon the very instructive and interesting discussion which had taken place, which contrasted very favourably with the one which had recently taken place elsewhere. His remarks only applied to the period of rupture as his specimens shewed.

Dr. Aveling was speaking of a condition he had never seen but once, but if he did come across a case of ectopic gestation before rupture had taken place, he would prefer to remove it. He would do this for several reasons. First of all, he would not have been called in if the patient were not ill, and the urgency of the symptoms would justify the treatment. For one case they could diagnose, fifty cases would escape. Further, even if electrolysis were successful, a useless organ was left with the risk of subsequent hyosalpinx recognition. With reference to the growth of the placenta, he said that Dr. Routh had certainly not exhausted the literature on the subject. In Hart and Barber's book there was a page and a-half devoted to the proof that the placenta grew after the death of the child. He was not aware of any case of growth of the placenta after death of the foetus by electricity, but then the diagnosis in those cases was very doubtful. He expressed himself sceptical as regards Dr. Routh's quotation that electricity could cause the foetus to be driven along the tube with the uterus. That the growth of the placenta did take place after death of the foetus was evidenced by his specimens. So far as treatment of extra-uterine foetus in the paulo-post rupture stage, he said that he should produce his statistics at the proper moment, and not before. In reply to that other question, he would leave the foetus as long as he could, so as to give it the best chance of living, the more so as the mother's life was not thereby imperilled. He believed that if this course were uniformly adopted, the mortality need not exceed five or six per cent. He said that his opinions had been gradually changing as regards the removed placenta, because experience had taught him that its removal was easier than he had once thought.

Concerning the operations at the period of viability in the case of a living child, Mr. Tait strongly condemned the statistics of Dr. Harris as not being worth the paper they were printed on, being a mere chamber of horrors and not representing sound surgical conclusions.

The Society then adjourned.

*THE BRITISH GYNÆCOLOGICAL SOCIETY.*

WEDNESDAY, MARCH 14, 1888.

ARTHUR W. EDIS, M.D., F.R.C.P., PRESIDENT, IN THE CHAIR.

PRESENT: 37 Fellows, 8 Visitors.

The following were elected Fellows of the Society:—Dr. G. H. Aiken, Dr. J. Hasard, Dr. A. W. M. Robson, Dr. A. H. Wyborn.

The following were proposed for election:—Dr. C. Fancourt Willis, Bombay; Dr. John David Thorburn, Toronto; Dr. Leslie Matthew Sweetman, Toronto; Dr. Isaac A. Stone, Lincoln, Virginia; Dr. Walter Porter Manton, Detroit, Michigan, U.S.A.

Various electric batteries were exhibited by Messrs. Schall, Coxeter, and Down.

Dr. SAVAGE produced two ovaries which he had removed on the preceding day from a married woman, aged 25, who had been confined six days previously of her fifth child. Three days after her confinement she had developed feverish symptoms, for which she was given carbolic acid. She became worse, however, and when Dr. Savage was called in she was verging on delirium and had all the symptoms of peritonitis, with swelling and fluctuation of the abdomen. He advised immediate operation.

This was agreed to. On opening the abdomen the intestines were adherent to one another with recent lymph, and nearly a pint of non-offensive purulent fluid escaped. The ovaries were enlarged and black, and their present appearance failed to give a proper idea of what they looked like when removed. The patient was somewhat better on that (the



following) day, and it was hoped she would do well. He had brought the case before the Society, because of late the operation of opening the abdomen for purulent peritonitis had forced itself upon the profession, and he thought it was desirable that it should become very much more common than had been the case in the past. Unfortunately the operation when done for puerperal peritonitis had not been so successful as when performed in other cases; but it was important they should go on operating nevertheless. At the *post mortem* examination they always found that the condition of things was a distended abdomen, adherent intestines, together with a quantity of more or less offensive fluid down in the pelvis. This fluid must have been produced before death, during the illness, consequently it appeared to him that the only thing to do was to let it out. The patient *must* die if it were allowed to remain, while she *might* recover if it were evacuated. The difficulty was to know when to perform the operation. In obstetrical practice a large number of women had feverish symptoms which scarcely justified operation; but on the other hand, if the operation were done in these cases very much earlier, a large proportion would probably recover. Medical men were becoming alive to the necessity of calling upon specialists to operate, but they experienced a difficulty in deciding when and at what period they would be justified in doing so.

Dr. ROUTH observed that if the fluid which escaped was purulent, it ought certainly to have been evacuated. He asked Dr. Savage if it really was pus that escaped.

Mr. LAWSON TAIT said that if a woman had been confined and had a swollen and fluctuating abdomen, the fluid was uniformly purulent. During the preceding week he had operated three times for acute peritonitis. One case was that of a young woman, at about the fourth month of pregnancy, with a pulse of 160, and a temperature of 40.1C, who had been suffering from acute gonorrhœa. He had opened the abdomen and drained it, and the patient was now doing well. Another case was that of a young woman with acute suppurative peri-

tonitis, from whom at least a pint and a-half of flaky purulent fluid was withdrawn. Her condition prior to operation was so terrible in appearance that he was tempted to refuse to touch her. This patient was now practically well. The third case was supposed to be one of gall-stones, but it turned out to be a case of acute peritonitis. The abdomen was opened, and she also was doing well. A fourth case occurred in which he had been telegraphed to hold himself ready to operate on the Friday, but the patient died on the Tuesday. He thought no medical man was justified in allowing his patient to die without having the abdomen opened. He said there were two classes of cases, one where there was systemic infection from the beginning, with the bulk of the mischief expressed in the peritoneum, and in these they did not get good results; the second class of cases were those in which the expression was entirely local. Of the latter, five-sixths could be cured. It was impossible to tell beforehand with which class of cases they had to deal, and he believed it was their duty to open the abdomen in every case of peritonitis, and that, too, before they got to a stage to enable them to say whether there was pus or not.

The PRESIDENT said he was quite certain that there were many so-called hopeless cases of peritonitis which might be saved by a timely resort to this operation. In all cases where any doubt existed, as to their exact nature, a second opinion should be taken, and the patient given the chance of having her life prolonged by a timely operation.

Dr. R. T. SMITH asked Mr. Tait whether he always drained the abdomen in his cases? (Mr. Tait, yes). He asked Dr. Savage whether a vaginal examination had been made in his case, and whether the patient had pelvic cellulites or pelvic peritonitis? He thought that in the latter case it would always be desirable to operate.

Dr. MACAN objected to operative interference in cases of ordinary peritonitis, but admitted it in cases of encysted peritonitis where the disease had retrogressed, having a localised collection of pus.

Dr. CHALMERS said he had long been convinced that there were cases in which operation alone could save the patient. Just two months previously a patient of his, notwithstanding every care, died of puerperal septicæmia. He had had the possibility of the occurrence in his mind before the confinement. Although he was not prepared to say what were the exact signs to look for, he thought it was possible to foresee its occurrence in certain patients. In several cases where it had occurred he had made up his mind that it was to be feared.

Dr. SAVAGE, in reply, said that the temperature in his case went up to  $103.5^{\circ}\text{F}$ , and he thought he could distinguish fluid. He had come to his conclusion on the strength of the delirium and diarrhœa.

Dr. HEYWOOD SMITH exhibited the tubes from a case of pyosalpinx and hæmatosalpinx, on the same subject. They were both adherent, the adhesions being separated with some difficulty, showing that it was not merely tubes affected with purulent contents, but contracted adhesions. Both tubes were considerably thickened. He also showed a portable automatic douche for use, in circumstances where the ordinary hydrostatic douche was not convenient. It worked by spring pressure, on an indiarubber bag, which was separable, and could be applied to other uses.

Dr. R. T. SMITH showed a fibrous tumour of the uterus removed fifteen days previously by abdominal section. The interest of the case lay in the fact that she had been treated by electricity without benefit before resorting to the operation. The patient had been suffering from menorrhagia for four years. She had been admitted to the hospital, and had been treated on Apostoli's plan, with currents ranging from 80 to 800 milliampères. Subsequently the positive pole was substituted with a current of from 500 to 700 milliampères. They noticed that the uterus became very hard, and remained for about twenty-four hours in a state of contraction. He then sent the patient away for three months, to see if any benefit accrued, but she returned about a month previously almost dying from loss of blood. The tumour rose to three

inches above the umbilicus, and as the patient was unmarried, and the parts narrow, he was of opinion that if they had attempted to enucleate the tumour, they would have lost her.

Dr. INGLIS PARSONS criticised Mr. Smith's assertion that a current of 800 milliampères had been used. He thought there must be some mistake as to that. He observed that a current of that strength was nearly enough to give an ordinary electric light, and would certainly destroy the whole skin of the abdomen.

Mr. TAIT said that the same point had occurred to him; when he was at Paris he had made some enquiries, and he found the same scepticism existed as to the reading of the galvanometer as existed here. Some of the best electricians in this country had told him that Gaiffe's electrometer was a mere toy, but personally he could offer no opinion on that question. He had been told in Paris that the best results were obtained when they did not turn the current on at all.

Dr. RUTHIERFOORD asked whether the tumour was hard or soft, and whether any microscopical examination had been made. He had seen currents of 800 milliampères used, and the galvanometer had since been tested by a very competent electrician and certified to be correct.

Dr. STEAVENSON mentioned a case in which a current of 700 milliampères was said to have been used, and he had at once enquired whether the patient was under chloroform, for he did not believe that any woman could bear it without. At St. Bartholomew's they never went beyond 250 milliampères. Gaiffe's galvanometer registered higher than others. The vertical galvanometer did not register accurately after a lapse of time. When tested, one of Gaiffe's galvanometers registered double that of Coxeter's.

Dr. ROUTH said that a great deal depended upon the amount of moisture which was contained in the clay. If the clay were dry, the patient suffered very soon, but if wet, she could bear a much larger amount. He always took care that the electrodes were wet. Under any circumstances he denied

that it was possible for the patient to carry the current beyond 250 milliampères without causing intense pain.

Dr. FANCOURT BARNES, in reference to the hardening of the tumour under the current, explained that it was the uterine wall that contracted. He could not admit that a purely fibroid tissue could so contract, since there was nothing in it to contract.

Dr. AVELING deprecated partizanship in discussing the matter. He said that after the verdict from men who had tried it, they were bound to give it a trial. He was using it in four cases, and he quite agreed with what Dr. Routh had said. It was an important point to get the skin thoroughly wet. As to the 800 milliampères, he had found it difficult, for his own part, to get a patient to endure 200 milliampères without chloroform. His experience was that a tumour might be considerably reduced by that dose, and he had proved this in two cases by actual measurement. It was useless to make a violent opposition to facts which were of daily observation. There were cases which were not suitable for electrolysis, and others which were not fit cases for operation. Moreover, some patients refused any operation involving danger, but would willingly submit to be treated by electricity.

Dr. R. T. SMITH, in reply, said that the galvanometer used was Thistleton's. The tumour was always soft before the current was applied. The skin was blistered on two occasions. The patient did not have chloroform on either occasion. Personally he had no definite opinion on the subject. The specimens were not brought forward on that account, although it had an additional interest because of it.

*On the Action of the Constant Current on Fibroid Tumours.*

By J. INGLIS PARSONS, M.D., Assistant Physician to the Chelsea Hospital for Women.

As this method of treatment has excited a good deal of controversy, I will take the liberty of asking the Fellows to approach the subject with an open mind, and to remember

the bitter opposition with which the pioneers of abdominal surgery had to contend, although the marvellous results now obtained in that field of treatment show how unfounded and bigoted such opposition was. On more than one occasion, when expressing my opinion, founded on practical experiment, that electricity might be capable of doing good to cases unfit or too dangerous for operation, I have been met by the remark, "Well, I do not believe in it, but then you see I know nothing about the subject." Surely if a man has not studied a subject at all, his opinion should be neutral, and before condemning it he should test it.

I have no intention to-night of bringing forward any cases, nor will I go so far as to express any decided opinion on the merits or demerits of electricity. Through the courtesy of Dr. Edis and my other colleagues at the Chelsea Hospital, I have had the opportunity of treating various cases, but I think it better to watch them for a further period before bringing them before the Society. So far, the results are satisfactory and sufficient to encourage one to further endeavours. I would like to point out that as we are now able to give electricity in exact doses, its administration is placed upon an entirely new basis, and this fact alone is sufficient to warrant patient investigation, apart from any declarations and statements made by continental physicians, whether they be correct or incorrect. There is hardly a drug in the pharmacopœia, whose action does not depend on the dose. Who would ever think of writing a paper on the action of mercury without knowing whether the dose given amounted to one grain or five grains? This is practically what we have been doing with electricity until the introduction of a reliable galvanometer. At present our treatment is grounded almost entirely on empiricism. We know that if a constant current is applied in a certain way we have good reason to suppose that a certain result will follow. But how that result is brought about, we are more or less in the dark. What we have to endeavour to ascertain is, in what directions electricity is capable of effecting a cure, when other and

more simple means are wanting. No doubt some men will be found, if there are not some already, who will look upon electricity as a panacea for all evils, just as one hears of certain physicians who only practice "the dry treatment," and another the wet treatment, another mechanical, and so on.

Now in order to arrive at any conclusions, it appeared to me necessary to find out something more about the changes that take place when a constant current is passed through the tissues.

*Electrolysis.*—The most important of these changes, and, therefore, the first to be considered, is the partial or entire decomposition of certain molecules through which the current passes, and known by the name of electrolysis.

Whenever a current, however small, is passed through the tissues, this decomposition takes place, and the amount of decomposition is jointly proportional to the strength of the current and the time that it lasts. The application of a test paper to the area touched by the electrodes, before and after the application of the current, will be sufficient to show the presence of acids and bases at their respective poles, and which were not present before the application took place. It appears to me that two other effects result from this primary decomposition. So that for practical purposes electrolysis may be subdivided as follows:—

1st. There is a decomposition, partial or entire, of certain molecules.

2nd. There is the local action at the poles caused by the collection of acids and bases, the result of this decomposition.

3rd. There is the effect produced by the passage through the tissues of certain elements found only at the poles, and which passage Faraday called "the transport elements."

It is necessary to consider each of these points in detail. With regard to the first, an important and practical question at once arises, viz. : Does the decomposition take place only in the tissues in contact with the electrodes, or does it take place throughout the tissues traversed by the current? Supposing the first of these only to take place, it stands to reason

that in order to cause decomposition in a fibroid tumour, it would be necessary to bring the electrode in direct contact with it; whereas if the decomposition takes place throughout the tissues traversed by the current, this necessity ceases to exist. Whoever has used this treatment, will understand the difficulty of solving the question at the bedside. I therefore devised four experiments to see whether the principle would hold good of saline solutions.

1st Experiment.—Three glasses are connected together by two pieces of thick cord, saturated in the solutions contained in the glasses. The centre glass is filled with a solution of iodide of potash (which is easily decomposed by the direct application of the current), the two outer glasses are filled with a solution of chloride of sodium, each solution having a sp. gr. of 1080. Into each glass a pinch of starch powder is placed. The two electrodes were then introduced one into each of the outer glasses. Now if any decomposition of the iodide of potash took place, a blue discolouration would appear at the positive pole. A current of 100 milliampères was passed through the circuit, but no decomposition took place in the iodide of potash, much to my disappointment. The same experiment was then repeated with plain water in the two outer glasses, with the same result. A third experiment was then tried, to ascertain whether it might not be possible, that cells lying in the space between the poles traversed by the current, would part with some of their constituents in order to supply those in contact with the electrodes with some of the materials, of which they have been deprived by electrolysis. Into each of the glasses a solution of iodide of potash was placed having a sp. gr. of 1020. The circuit was again made, and a current of twenty-five milliampères passed for twelve hours. The outer glass containing the positive pole was a deep brown colour at the end of this time, from the iodine liberated by electrolysis and held in solution by the water. It occurred to me, that as the decomposition proceeded in the outer glasses they might draw on the iodide of potash in the centre glass. If this



had taken place the sp. gr. of the solution in the centre glass would have been lowered. However, on taking the sp. gr. of the solution in the centre, there was no alteration whatever, while of the two outer glasses, the sp. gr. was raised in the one containing the iodide pole, while it was lowered in that containing the potash and negative pole. This difference was due to the atomic weights of the two elements. If any one wishes to repeat these experiments, I may tell that the resistance of the apparatus used was about 1,000 ohms, and in order to obtain a current sufficiently strong I was obliged to go to one of the electric light companies, and perform the experiments down in the cellars of one of our large clubs. A further experiment was then carried out as follows:—A current of one milliampère was passed for ten seconds through the web of a frog's foot and the operation watched through the microscope, one inch objective. The changes occurring at each pole could be examined, and of these I shall speak again, but there was no change to be seen in the intervening space. The circulation continued just as before, and nothing could be made out. It would then appear to be necessary for the electrode to come in contact with the tumour, if we wish to cause decomposition, or what I would designate as "primary electrolysis."

I will now pass on to consider the local action at the poles, caused by the collection of acids and bases resulting from the "primary electrolysis."

Now this action is entirely distinct from the first, so much so that by various methods of application it can be utilised either partially, to its fullest extent, or almost entirely prevented. By its means we can intensify the local action on the tissues. The nature of this action is entirely chemical, and I would propose to call it "the chemical action of electrolysis." Any one who has applied a metal electrode to the skin, will have noticed how much more painful it is than when the same electrode is covered with leather or some other substance capable of taking up the products of primary electrolysis, and so mitigating their action, although in each instance the intensity of the current is exactly equal.

Whenever we wish to pass a current through a uterine fibroid, it becomes necessary to place one electrode on the skin of the abdomen, and to prevent any chemical action, it is necessary to place some substance between the skin and the metal electrode, which shall be capable of absorbing the products of decomposition, and so prevent it from hurting the skin. For passing strong current for any length of time, it is necessary to have this layer of some thickness, otherwise it becomes saturated with acids and bases, and its chemical action on the skin then begins. The electrode, on the contrary, which is in contact with the fibroid, should be kept uncovered so as to take advantage of this chemical action. To do so to the fullest extent, it is necessary to puncture the tumour, and this should if possible, be done to the extent of about one inch, because I have found by experiment that the acids and bases which form at the respective poles diffuse through the tissues to that extent when a current of 200 ma. is kept on for thirty minutes.

With regard to the different action of the two poles. This appears to me to be entirely due to the difference in their chemical constituents.

At the positive pole acids are found. At the negative pole bases are found. These bases, as one would naturally expect from the chemical composition of the tissues, consist chiefly of hydrogen and alkalies.

If dilute caustic alkalies be applied to soft tissues they liquefy them, and cause considerable pain. If dilute acids be applied they cause coagulation, and have a benumbing influence on the nerves (one of the best acids for producing this is carbolic acid). The same effects are produced by the negative and positive poles respectively.

For practical purposes it is worth while to consider what difference there is, if any, between the destructive effects of the two poles. There appears to be an idea that the negative pole is more powerful than the positive. The amount of primary electrolysis must of course be equal for each pole, so far as we at present know, while the effects produced by the

secondary chemical action is quite as great at the positive if not greater than at the negative. Because the alkalies liquefy tissues, it does not follow that their action is more destructive than acids, which coagulate and even clear them.

To begin with, the acids form a much larger proportion of the soft tissues than the bases do. We should, therefore, expect the quantity of acids at the positive pole to be much larger than the quantity of bases found at the negative, excepting, of course, hydrogen, and consequently destructive action greater. My friend, Dr. Pitt, drew my attention to the fact that when currents are used by physicians in ordinary medical cases, if any slough takes place in the skin, it is usually at the positive pole.

Referring to the experiment before-mentioned, on the web of the frog's foot, the area of coagulation caused by the positive pole was ten times as large as that caused by the negative pole. In fact the only change to be seen at the latter consisted of bubbles of hydrogen gas, and their presence was a matter of perfect indifference to the tissues round, for the circulation could be seen going on right underneath the bubbles.

Similar results were obtained by passing a current of 50 ma. for 10 minutes through a fresh specimen of sheep's blood. At the negative pole only bubbles of hydrogen gas were found mixed with the blood, while at the positive pole a clot formed measuring half-an-inch across, and the blood in contact with the platinum needle was charred by the acids. A more striking proof is afforded by the tumour which I hand round. This is a small sub-peritoneal fibroid about the size of an orange. I am indebted to the courtesy of Dr. Snow, of the Cancer Hospital, as it was through him I procured it, within one hour after its removal from the living body. Two needles were at once inserted to the depth of half an inch, and connected to the two poles of a battery. The current was kept on for one hour and a-half with an intensity of 200 ma. A crackling noise produced by the decomposition could be distinctly heard. A large portion of the hydrogen gas,

not being able to escape at the side of the needle, found its way through the thickness of the tumour to the surface, where it could be seen escaping in bubbles. I found a practical benefit only recently from knowing this fact, when one of my patients became much alarmed at the bubbling she said she could feel in the abdomen. One might have thought that the needle was in the abdominal cavity, but I was able to assure her that there was nothing dangerous going on beyond the escape of a little gas, and she was none the worse for it. (Mrs. W., case under Dr. Edis.)

At the end of one hour and a-half the current was broken and a section was made of the tumour, and that portion of it acted on by the current cut quite hard and gristly, as compared with the rest. This change was also perfectly apparent to the touch. On making some fresh sections and examining them under the microscope, I found that, of the portion in immediate contiguity to the needle, everything had disappeared except the fibrous tissue, and this result was obtained at both the negative and positive poles. Sections taken from the other parts of the tumour by Dr. Rutherford showed the usual structure of a myoma. This was the case even with the portion that had undergone the chemical action produced by electrolysis. In this instance there was no difference between the destructive effects of the two poles. The experiment also shows how much greater is the resistance of fibrous tissue as compared with others. This effect was produced within two hours after the removal of the tumour from the living body, when the abdomen could scarcely be said to be dead, and so affords some ground for the belief that a like effect could be produced on a tumour in the body, provided the needle could be introduced to the same depth. I have treated one case in this way with most satisfactory results, and shall read the details on a future occasion. It is necessary, however, to remember that by this method not only is there a decomposition or primary electrolysis, but also, that the full benefit is obtained from the chemical action produced by that decomposition. Although in this specimen, the fibrous tissue

appears to be unaltered, it is quite possible that some change has taken place, which is unappreciable to the eye. There is some ground for this belief when we call to mind the brilliant results obtained by surgeons in the treatment of stricture of the urethra by electrolysis, with the negative pole in contact with the stricture. Here I would suggest, that acting on the lines laid down for urethral stricture, we may possibly have a more efficient weapon for producing a permanent benefit in cases of stenosis of the os internine. The resisting power of fibrous tissue exhibited in this specimen appears to me to offer an explanation of the change which takes place in these tumours under treatment. They become smaller and harder, but do not as a rule disappear entirely; probably the greater portion of the fibrous tissue remains behind as an inert mass.

With regard to the third action of electrolysis, viz., the transport of elements, we are still very much in the dark as to its action, still more as to its effects on living tissues. If a solution of any salt or even simply water be acted on by the current, what takes place? Let the solution be iodide or potash. At the negative pole potash alone appears; at the positive pole iodine alone appears. Now whether the decomposition takes place at both poles, or at only one pole, we are forced to admit that either the potash or the iodine or some of both from each pole has to cross the intervening space, and the curious part is, that elements cannot be detected during their transit from one pole to the other. At present we do not know, beyond the broad distinction between acid and bases, what chemical substances are found at each pole when a current is passed through the body. It is, however, conceivable that the complex molecule of albumen, when it undergoes decomposition by the current, furnishes a number of bodies that may have some very decided effect on those tissues which they traverse, although such tissues do not apparently undergo actual decomposition in the same way that those in contact with the electrodes do. This may appear a mere theoretical consideration. But it is on the contrary a very practical one. If such an effect does take

place, we have a means of getting at those tumours which are not within the reach of electrodes. And I would advance the hypothesis, "that while the ordinary tissues of the body have the power of recuperating any effect produced on them by the transport of elements, the cells of tumours being of lower vitality might be checked, and in their growth, perhaps, in time destroyed by this method."

The subject requires further investigation before any conclusion can be arrived at.

Several experimenters have taken advantage of this transport of elements to introduce substances into the body, Von Bruns Munk (Elb. electro-therapeutics, p. 129) in Germany, and Onimus and Legros in France (*Traité d'Electricité medicale*, p. 210). It is obvious that if medicinal substances can be made to pass through the tissues in this way, we have a means whereby the action of elements, during their transport through living tissues, may be very considerably added to. With a view of putting this to the test, I have on several occasions swabbed the uterine canal with a saturated solution of iodide of potash, then passed the negative pole, and placed a solution of starch on the skin of the abdomen with the positive pole in contact, and turned on a current of 200 ma. Now, if such an action took place, the iodine ought to appear on the skin and discolour the starch, but nothing of the kind took place. I also repeated the same experiment with a cup-shaped electrode that I had made two years ago for pelvic cellulitis. This was filled with the solution. The result was negative again. However, I have some reason to believe that the initiative is taken by the positive pole, so that the subject requires further investigation. I found that if two glasses, one containing plain water and the other a saline solution, be connected by a damp cord, so that they have no direct communication, and a current is then passed from one to the other, no decomposition takes place with the negative pole in the saline solution. If the poles be now changed, so that the positive is in the saline solution, a decomposition is at once set up.

*Effect on the circulation.*—Since these fibroid tumours are surrounded by a capsule exceedingly rich in vessels, it becomes necessary to consider what action the constant current may have on them. Onimus and Legros are the chief upholders of the view that with a descending current blood vessels dilate, and with an ascending current they contract (*Traité d'Electricité medicale*, p. 280). On the other hand, their own investigations tend to show that the unstriped muscle cells, such as are found in vessels, only contract at the make and break of the current, and not during its passage. It occurred to me that the best way to test it would be to observe the vessels of the retina. Alterations in these may be seen under other conditions, and, therefore, why not under the influence of the current provided any change does take place. My friend, Dr. Basil Walker, who is an adept with the ophthalmoscope, was kind enough to bring two of his hospital out-patients to my house, with the fundus healthy in each case. He then examined the eye while I passed the current.

1st Experiment.—Dr. B. Walker examined the fundus to note the size of the vessels before the application. The positive pole was then placed on the nape of the neck, and the negative pole on right temple. At the make of the current the patient experienced a flash of light. The intensity was gradually raised from 1 to 25 milliampères, and continued for five minutes.

2nd Experiment.—The above was then repeated, with the position of the poles reversed. Dr. Basil Walker was unable to detect any difference either during or after the passage of the current; nor did the position of the poles make the least difference.

3rd Experiment.—This was done in same way, only the poles were placed in the position used for the so-called galvanisation of the sympathetic. One pole is placed opposite the angle of the jaw, while the other is on the opposite side near the seventh cervical vertebra. At the make and break flashes of light were again experienced. Dr. Basil Walker examined before, during, and after the application, but could find no

change in the vessels whatever, although the current was kept at 10 milliampères for ten minutes.

4th Experiment.—The experiment repeated with the poles reversed, no change to be seen.

Messrs. Onimus and Legros state that the changes can be well seen in the web of a frog's foot, under the microscope. I therefore tried the experiment in every conceivable way, and several times both with ascending and descending currents with an intensity of 1 ma. Great changes are certainly seen to take place in the vessels, but the results are not constant. Sometimes the circulation was accelerated, sometimes retarded, and occasionally stopped, and this occurred both with the ascending and the descending current, but there the same results could often be obtained by simply touching the frog with the electrodes, without any electricity!! and so it appears to me that this method has no practical value.

An increase in the circulation no doubt takes place locally in the area affected by electrolysis, but I believe this is secondary to the chemical action of the current, and would occur if a similar injury to the tissues was brought about by any other means. Even this can be obviated at the indifferent pole by making the pad of material between the metal electrode and the skin extra thick, so as to absorb the chemical products as they form.

*Action on muscular fibres of uterus.*—One more question requires consideration. Is there any contraction of the uterus during the passage of the current? At the make and break a contraction no doubt takes place. Onimus and Legros say that one can actually stop the contractions of the uterus during parturition by passing a constant current. They proved it by opening the abdomen and acting on the uterus of bitches, during parturition. I have also noticed during the applications in the human subject, that the internal electrode is never grasped by the uterus, although this effect is soon produced if the current be reversed quickly, each make and break causing a contraction.

To sum up. The conclusions I would draw are these:—

1st. That electrolysis takes place at both poles.



2nd. That a chemical action secondary to the electrolysis also takes place at both poles, and appears to be most destructive at the positive pole.

3rd. That electrolysis does not appear to take place in the intervening space between the poles traversed by the current.

4th. That in all probability the transport of elements has some effect on the living tissues, through which it takes place.

5th. That no change takes place in the vessels during the passage of the current, except a local hyperæmia, due to the chemical action at both poles.

6th. That no muscular contraction takes place in the uterus or tumour, except at the make and break of the current.

*Description of method of application.*—I do not consider it at all necessary to use clay for the external electrode. It is messy, and a great nuisance to keep in order. To apply strong currents, it is necessary to reduce the density to a minimum, where the indifferent electrode is placed. This practically means making the electrode as large as possible. Not only must it be large, but it must touch the skin all over the surface. The one I use is made of lead or copper, measuring 9 inches by 7 inches, and curved to suit the contour of the abdomen. Between the metal and the skin, several layers (some 4 to 6, according to thickness) of linen are placed, previously damped in water. Any napkins or cloths will answer the purpose, provided they are not too rough. It is most essential to see that each layer lies evenly on the other, and that there are no rucks or ridges. If there be any the current will be concentrated on the projecting surface. The substance of the linen is rather less than clay. The patient can hold the electrode in position herself, but she is apt to tilt it to one side or the other, and if that be done, the current becomes concentrated there, and a destruction of skin will follow. Since the current, from a metal electrode of this kind comes off chiefly from the edges, it is better either to round off the edge or run an insulator round it. I have used an intensity of 300 ma. in this way, and if the points I have indicated are attended to it will be found to work satisfactorily. The cavity of the uterus

will often be found to be lengthened even by 5 inches, and the diameter of the canal varies very much. In other cases, although the canal may be large, it is encroached upon at one point, and there is more or less of an obstruction. The electrode which I show here has been designed to meet these difficulties. The insulator is moveable, and can be adjusted to any length required. The handle is larger than usual so as to give more command over the instrument. The sounds are made of different calibres, to suit different cases.

With regard to the frequency and duration of the applications, I do not agree with Apostoli in laying down such definite rules. Each case must be taken on its merits. For instance, only recently I have treated a patient of Dr. Edis's with galvano-puncture. The applications were made every other day with a duration of thirty minutes and a current intensity of 200 ma. to 250 milliampères, and the patient was none the worse. This is about double the maximum allowed by Apostoli.

Whenever puncture is employed it is necessary to take antiseptic precautions. Whether this be done by ensuring the absence of any septic matter by attention to strict cleanliness, or whether it takes the form of using such materials as will neutralise the action of any dirt or other matter, the result in each case will be satisfactory and practically comes to the same thing.

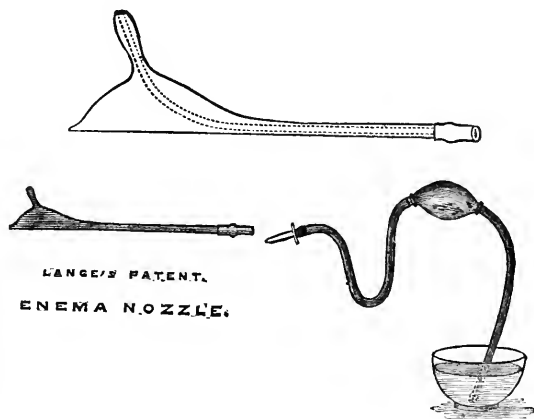
With regard to the position of the patient. The dorsal one depicted by French authors is most indelicate and quite unnecessary. Let the patient be placed on her side with the legs drawn up to a right angle with the trunk, and both arms in front to hold the external electrode.

Dr. BANTOCK proposed and Dr. SAVAGE seconded a resolution, that the discussion on the paper be adjourned to the next meeting. This was carried.

The Society then adjourned.

REPORTS AND ANALYSES.

Mr. H. J. Lange, of 47, Arthur Road, Tollington Road, N., has invented a new enema nozzle, which is designed to avoid the difficulties experienced in the self-administration of an enema. The nozzle, which is simple in construction, can easily be passed into the rectum without fear of any injury.



With this nozzle the patient is enabled to take an enema in the sitting posture, whilst using any apparatus he may happen to possess. We have found the nozzle to be easy of application and satisfactory in its working. It is made of vulcanite and is sold at a cost of three shillings and ninepence, postage paid.

CLINICAL REPORTS.

*Cæsarian Sections.* By Dr. F. WILSON, Cape Colony.

I was called to attend Maria van der Westhuizen on the evening of May 16th, 1887, and found her suffering from all

the symptoms of abortive labour. On enquiring I was informed that she was seventeen years old and about a year married. On examination I found her to be a primipara, and on measuring the antero-posterior diameter of the pelvis with Greenhalgh's pelvimeter found it to be 1.25 inches, the whole of the passage being almost blocked by a tumour, apparently an exostosis, growing from the promontory of the sacrum. As there seemed no chance, under the circumstances, of delivering by any means, *per vias naturales*, I decided, with the consent of the family, to perform hysterotomy. Having attended to the rectum and bladder as usual, I placed Mrs. van der Westhuizen in the proper position and fixed her to the bed by two sheets. Having made an incision 7 inches long extending from just below the umbilicus almost to the pubis along the linea alba through skin and fascia, I divided the peritoneum, using my fingers as directed. The uterus was immediately seen, and having made an incision therein, 5 inches long, between fundus and cervix, I seized the child by the feet and easily extracted both child and placenta.

I must mention that on making the uterine incision, I fixed each end of the same to the outer wound by a stitch of whipcord, which was afterwards removed.

On removing the child, placenta and membranes (after removing the stitches), the wound in the uterus immediately contracted, and not judging it advisable to disturb the wound, to pass a probang through the os uteri (which I had neglected to do before removing the stitches), I proceeded to close the outer wounds by means of silver sutures placed closely together, taking care to pass the sutures through the peritoneum to secure apposition of the peritoneal surfaces. (The uterine wound was not closed by suture.) Before closing the wound I searched the peritoneal cavity for coagula, but found little, as the hæmorrhage was surprisingly small.

I have omitted to state above that I drew off the liquor amnii with an ordinary enema syringe. Above the stitches I dressed the wound with lint, wet with carbolized oil, and

above this several broad bands of plaster and a good flannel bandage. No anæsthetic was used, and the woman gave no evidences of feeling pain beyond a scream on feeling the first incision and at intervals a sighing groan. From the first incision to the last dressing the operation lasted one hour, forty-two minutes. After the operation, as the pulse was almost imperceptible, I gave her brandy and ammonia in drachm doses, in water, each ten minutes till the pulse began to rise. For the first twenty-four hours after the operation, I gave her only brandy and coffee, with a suppository of pil. sap. co., and twice quarter of a grain of morphia subcutaneously. The womb was also twice a day syringed with one in forty carbolic solution. The child, a boy, was born alive, and is still living. The mother made a good recovery, the wound having almost completely healed when I removed the stitches on the seventh day.

As there was no skilled attendance, I found it impossible to obtain a register of pulse and temperature. The highest temperature observed by me was  $160^{\circ}$  on the third day. The highest pulse was  $120^{\circ}$  on the same day.

Present during the operation (midwife), Zicna Wagenaar, H. G. Oelopigie.

*Case of Embryotomy.* By Dr. F. WILSON, Cape Colony.

On September 7th, I was called to attend Margrita van Zijl, æt. nineteen, primipara, and found her suffering from the symptoms of abortive labour. On examination and measurement of pelvis with Greenhalgh's pelvimeter, I found antero-posterior diameter to be only 1.75 inches, and decided to again employ the ecraseur as far as possible. After perforating I proceeded to snare successive portions of the head with the wire loop of the ecraseur,<sup>1</sup> each portion being removed by finger and forceps. Again, I noticed the absence of spicula of bone. The trunk was also treated in the same way after evisceration. I did not find any insurmountable difficulty, it being only necessary to keep an accurate picture of the

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<sup>1</sup> Barnes' method.

uterus and its contents before one's mind's eye. The operation was, however, tedious, taking altogether nearly four hours, but I am certain that I should not have succeeded by any other means *per vias naturales*.

The old lady who assisted me, and who witnessed this, informs me that there were more than one hundred fragments. I also found it necessary to replace the wire of the ecraseur by a fine piano wire, which I re-annealed by heating in charcoal and plunging into oil.

Mrs. van Zijl made a good recovery, just as after an ordinary confinement. The cause of pelvic deformity was rickets.

*Ovariectomy in a Woman aged 80 years.*

By Dr. E. MATTHEWS OWENS, Brisbane.

I have very great pleasure in communicating the following extract from a letter from my old pupil and assistant, E. Matthews Owens, of Brisbane, Queensland, narrating a case which certainly is a marvellous example of pluck on the part of the patient, and proper boldness on the part of the surgeon.

LAWSON TAIT.

I was called in consultation on December 1st, by Drs. Purcell and Clowes to see a lady, Mrs. S., æt. 79 years, 10 months, who was suffering from a tumour in the abdomen. On visiting her I found her to be a thin wiry woman, with a tumour presenting all the symptoms of an ovarian tumour, the girth of which was forty-three inches. She was suffering great distress, and was most anxious for some relief. After consulting together, and seeing what a good subject she was, and her great anxiety for relief, I recommended her to have it removed, to which she readily consented. She was removed to a private hospital, where, on December 8th, at 8.30 a.m., I operated in the usual way with an incision of two and a-half inches; chloroform was given, ether being subcutaneously injected every few minutes during the in-

halation. The tumour proved to be parovarian, was shelled out, no ligatures being used. The toilet of the peritoneum was carefully attended to, and wound closed. First twenty-four hours she had warm brandy and water by mouth. Stitches were removed fourth day. She sat up ninth day, and went home quite well on the thirteenth, twenty days from her first being seen. There was slight vomiting on the second day, and rise of temperature fifth day, both of which were accounted for by little error on nurse's part, and were quickly overcome.

I was ably assisted in the operation by Drs. Clowes and Purcell.

*Remarks.*—It may be asked why I operated on so old a patient. I did it, first, because her distress was so great, and she so longed for some relief. Secondly, because I thought from her physical condition she was more likely to recover than many patients twenty years younger. Thirdly, because she herself wished either a radical cure, or her sufferings to end. As the result showed, the decision was a wise one. I would remark that Queensland cannot be so unhealthy a place, for this old lady has lived here forty-six years. I cannot conclude without paying great tribute to her pluck in deciding to have such an operation performed at her time of life, and she deserves to have a prolonged lease of life.

*A Research into the Coincidence of Ovulation and Menstruation.* By LAWSON TAIT, F.R.C.S., President of the British Gynæcological Society, &c., &c.

Between October 31, 1884, and the end of May, 1885, I removed the uterine appendages in fifty-one cases, for various reasons, and in the great majority of these cases a very careful research was made into the relations of the time of the menstrual month at which the operation took place, and the conditions of the ovaries as far as ovulation was concerned. Of these cases those in which the ovaries appeared to the

naked eye to be more or less healthy were given by me to my assistant Miss Clark, who has made such careful observations of them that I present them *in extenso*.

In case of the great bulk of the other ovaries, they were so disorganised that practically no kind of normal ovulation was discernible in them; those I examined myself. They were either broken down by suppuration, occupied by cysts, or so altered by chronic inflammatory disease as to present nothing of the character of normal ovarian structure, and therefore all these cases, or nearly all of them, go to prove that no kind of pathological change in the ovary makes any difference in menstruation. This has been long known to be the fact concerning cystoma, and if it were true that ovulation was the exciting cause of menstruation; that at every menstrual period a follicle was ripened, burst, and discharged, *vid* the ovum; then we have the singular fact concerning this interesting organ that diseases of any kind affecting its structure, even cancer, do not interfere in any way with the fulfilment of its function. We should also have the singular fact that removal of the organ does not apparently interfere with, in many instances, the sequence of its function, for in many cases where both ovaries are removed menstruation is carried on for some considerable time after. In those cases in which, as I have already said, the ovaries appeared more or less healthy, Miss Clark has made very careful dissections of them and has put on record what she found.

It will be seen by the most casual investigation of these dry details that hardly a healthy ovary can be found amongst the lot, and many of them go so far as to represent, as in Case XVII., practical destruction of the organ. In cases of myoma and inflammatory disease of the Fallopian tube, the function of menstruation is exaggerated, and always altered very materially; whereas, when the tube and uterus are not so affected, and the ovary alone diseased, no such alteration of menstruation is noted. When there is disease of the tube and no disease of the uterus, menstruation is exaggerated, and correspondingly, when there is disease of the uterus and no



disease of the tube, again menstruation is increased, alike in frequency and quantity. We are therefore driven to the conclusion that the function of menstruation must be associated with the uterus and tube; that is practically with the one organ, for the Fallopian tube is but an extension of the uterus; indeed, what we call the Fallopian tube is truly a part of the uterus, the true Fallopian tube being little more than the ostium externale.

I propose to divide the cases noted by Miss Clark into three groups; and, although it is perfectly evident that each reader of the notes may be disposed to arrange them in a fashion of his own, if we arrange them at all on the theory that ovulation and menstruation are coincident, we must accept one principle—Fawsitt's division—which is that under the belief that menstruation is excited by the presence of a ripe follicle, we must have clear evidence that the operation has been at or near the time of menstruation, that there is a follicle on the point of rupture, that it has just ruptured, or that it shows such appearances of rupture that, dating its appearances backwards from the time of the operation to the time of menstruation, those appearances of rupture are compatible with the time that has elapsed. On this principle I find that out of twenty-eight cases there are only three which go to show that menstruation and ovulation are coincident; on the contrary there are seventeen cases which go to show that ovulation is continually progressive (at what rate we have no notion at all), but that it is not coincident with menstruation. Then there is a third group of eight cases which I label doubtful, because it is impossible to see what their relations are; but, putting on its trial the ovulation theory of menstruation, in these doubtful cases they must be regarded as evidence against it, because it is clearly evident where any evidence exists, that as no inherent testimony supports the doctrine, it must be considered as testimony subverting it.

Group 1.—Cases which go to show that menstruation and ovulation are concurrent: III., XXII., XXVIII.

Group 2.—Cases which go to show that ovulation is con-

tinually progressive, and not coincident with menstruation : I., II., IV., V., VI., VII., XII., XIII., XIV., XV., XVII., XVIII., XXI., XXIII., XXIV., XXV., XXVII.

Group 3.—Cases doubtful: VIII., IX., X., XI., XVI., XIX., XX., XXVI.

NOTES OF APPEARANCES IN THE APPENDAGES OF TWENTY-EIGHT CASES OPERATED ON BETWEEN OCT. 31, 1884, AND MAY 23, 1885. BY MISS A. CLARK, M.D.

*I. Operation for Parovarian Cysts, Oct, 31, 1884. Last cat.  
Oct. 19 to 24.*

*Right Ovary.*—Follicle  $\frac{1}{3}$  diameter with wall thinned on surface of ovary, containing clear fluid.

*Follicle* appeared on point of bursting.

*Corpus Luteum*  $\frac{1}{5}$  below superficial cicatrice; corrugated yellow layer  $\frac{1}{32}$  filled with blood-clot of a light colour in centre and dark at circumference.

Remains of *Corpus Luteum*  $\frac{1}{10}$ , with thin yellow layer and containing trace of blood-clot.

*Cyst*  $\frac{3}{4}$ -inch diameter close to hylum of ovary; ruptured in removal of ovary.

Two traces of *Corpus Luteum*. Yellow layer thin and puckered.

Four or five traces of *Corpora Lutea*.

Four or five *follicles*  $\frac{1}{8}$  to  $\frac{1}{16}$  containing clear fluid.

*Left Ovary.*—Two *Follicles*  $\frac{1}{4}$  containing clear fluid.

*Follicle*  $\frac{1}{8}$  containing altered granular blood; lining membrane stained brown, but no trace of a yellow layer.

Remains of a *Corpus Luteum*  $\frac{1}{16}$ ; walls yellow and slightly corrugated, no contents.

*Corpus Luteum*  $\frac{1}{4}$  +  $\frac{1}{16}$  corrugated; yellow layer  $\frac{1}{32}$  and containing small blood-clot.

Two traces of *Corpora Lutea*.

Two *Corpora Alba*  $\frac{1}{16}$ .

Several *Follicles*  $\frac{1}{15}$  to  $\frac{1}{8}$ .

*II. Operation, Nov. 3, 1884. A. M. L., æt. 30. Single. Persistent pain and excessive loss. Small myoma. Right ovary. Weight 104 grs.*

On the surface of the ovary a yellow scar, section through which

opened a *Corpus Luteum*  $\frac{1}{8}$  inch diameter with a yellow layer  $\frac{1}{20}$  thick and containing a dark red clot.

Two traces of *Corpora Lutea*  $\frac{1}{20}$ .

Two *Corpora Alba*  $\frac{1}{20}$ .

Five or six follicles  $\frac{1}{8}$  to  $\frac{1}{4}$  containing clear fluid stained yellow, and with thin membranous walls covered with minute blood-vessels. In one follicle an extravasation of blood in the walls, eight or nine follicles  $\frac{1}{10}$  to  $\frac{1}{20}$ .

Left ovary weight 124 grs.

On removal of ovary a cyst burst on the anterior surface; cyst  $\frac{1}{2}$  inch diameter contained an organised blood clot, pale on surface and dark in centre, and which weighed on removal 13 grs. Membrane lining cyst thin and transparent, irregularly stained, and injected with blood, but without any trace of yellow colour.

On posterior surface of ovary yellow scar, section through which showed a collapsed *Corpus Luteum*  $\frac{1}{2}$  without contents, walls corrugated  $\frac{1}{30}$  thick.

*Corpus Luteum*  $\frac{1}{3}$  corrugated.

Yellow layer  $\frac{1}{25}$  and containing thin blood clot.

*Corpora Alba*  $\frac{1}{3} \times \frac{1}{10}$  with deeply corrugated white walls.

*Corpora Alba*  $\frac{1}{9}$ .

Three or four traces of *Corpora Lutea*.

Eight or nine follicles  $\frac{1}{2}$  to  $\frac{1}{10}$  containing clear fluid.

Two follicles  $\frac{1}{2}$  and  $\frac{1}{3}$  containing yellow fluid.

### III. Operation for Myoma, Nov. 10, 1884. E. N., æt. 42.

Widow. Last cat. Nov. 3.

*Right Ovary*.—Weight, 98 grs.

A Cyst  $\frac{1}{4}$ -inch diameter, containing clear fluid ruptured in removal of ovary.

A congested area on lower border of ovary with a central cicatrice with irregular edges stained with blood. An incision through this showed a *Corpus Luteum* nearly  $\frac{1}{2}$ -inch in diameter, with deeply corrugated pale fawn-coloured walls  $\frac{1}{9}$ -inch thick, containing a thin layer ( $\frac{1}{40}$ ) of firmly-adherent pale organised blood-clot, except just below the cicatrice, where the clot was dark-red and  $\frac{1}{20}$  thick.

Remains of *Corpus Luteum*  $\frac{1}{4} \times \frac{1}{5}$ ; walls smooth and yellow,  $\frac{1}{30}$  thick, and containing thin pale layer of blood-clot.

Traces of two *Corpora Lutea* near surface of ovary.

*Corpora Alba*  $\frac{1}{8}$ -inch diameter near surface of ovary ; walls  $\frac{1}{30}$  thick.

No other distinct follicle or cyst to be seen.

*Left Ovary*.—Weight, 86 grains.

A *Cyst or follicle*,  $\frac{1}{2}$ -inch diameter, with thin transparent wall, and containing clear fluid.

*Follicle* with white cartilaginous walls  $\frac{1}{10}$ -inch diameter.

*Follicle*  $\frac{1}{8}$  containing clear fluid.

Close to hylum of ovary a *Cyst*,  $\frac{1}{3}$ -inch diameter, with opaque white walls and containing clear fluid.

*Corpus Luteum*  $\frac{4}{10} \times \frac{3}{10}$ , with smooth thin yellow walls ( $\frac{1}{60}$ ), and containing a thin layer of colourless clot with one red spot in it.

Two traces of *Corpora Lutea*.

Surface of ovary much puckered, and no other distinct follicles or cysts seen.

#### IV. Operation for Myoma, Nov. 12, 1884. L. L., æt. 35.

Last cat. Oct. 22 to 29.

*Right Ovary*.—Weight, 55 grains.

Two cysts ruptured in removal of ovary, both containing clear fluid.

One of these *Cysts*, 1-inch in diameter, with marked development of capillary vessels in walls, and with blood extravasated in one place below lining membrane of cyst.

The other cyst, about  $\frac{1}{2}$ -inch in diameter, and with a third cyst communicating with it by a small opening ; the walls between these three cysts extremely thin.

A dark purplish spot showed on surface of ovary, section through which opened a *cavity*,  $\frac{1}{8}$ -inch diameter, containing a soft red adherent clot ; there was no defined lining membrane to this cavity.

Two *similar cavities* without defined lining membranes—one  $\frac{1}{10} \times \frac{1}{20}$ , with a dark-red granular clot, and the other  $\frac{1}{8} \times \frac{1}{10}$ , with a pale organised clot.

Trace of *Corpus Luteum*,  $\frac{1}{20}$ .

*Corpora Alba*,  $\frac{1}{10}$ .

Remains of *Corpus Luteum*  $\frac{1}{8} \times \frac{1}{20}$ , with a distinct yellow layer and thin clot lying between collapsed walls.

*Left Ovary.*—Weight, 95 grains.

After large cyst emptied, 55 grains.

*Cyst*,  $\frac{3}{4}$ -inch diameter, containing thin red fluid (serum stained with blood).

*Follicle*,  $\frac{1}{4}$ -inch diameter, with opaque walls with a trace of yellow colour in them, and containing clear fluid.

*Follicle*,  $\frac{1}{4}$ -inch diameter; thin transparent walls and clear fluid.

*Cyst*,  $\frac{1}{6}$ -inch diameter, with ill-defined walls and containing blood-stained fluid.

*Follicle*,  $\frac{1}{8}$ -inch diameter, deep in substance of ovary with slightly corrugated white walls (*Corpora Alba*), and containing small dark organised clot.

*Corpus Luteum* below a superficial cicatrice,  $\frac{1}{10}$ -inch diameter; walls corrugated, pale fawn colour,  $\frac{1}{30}$  thick, and containing remains of organised clot.

*Follicle*,  $\frac{1}{10}$ -inch diameter, with ill-defined walls containing blood-stained fluid and small clot.

Dark-red stain, apparently a trace of one of these old follicles.

*V. Operation for Myoma, Nov. 17. E. T., æt. 38. Married.*

*Last cat. Oct. 19 to 25. Pain and excessive loss.*

*Right Ovary.*—Dense adhesions of tube and broad ligament to ovary too firm to break down.

*Cyst*, size of Tangerine orange, in ovary filled with dark blood-clot. Clot in organised layers and those nearest to wall pale and adherent; when stripped off, wall showed a thin transparent lining membrane; walls soft and torn with slight touch except at one part where the ovarian stroma was stretched over the cyst. A few small *Graafian follicles*,  $\frac{1}{15}$  to  $\frac{1}{20}$ , in this tissue. The rest of the ovary disorganised and inseparable from adhesions. No follicle of any kind seen in it.

*Left Ovary.*—75 grains.

*Follicle*,  $\frac{1}{2}$  inch diameter, thin transparent walls containing clear fluid.

*Follicle*,  $\frac{1}{4}$ -inch diameter, separated from first follicle by soft wall injected with capillaries.

*Follicle*,  $\frac{1}{8}$ ; opaque white walls,  $\frac{1}{50}$ . Contents, clear fluid. Below this one a *Corpus Luteum*,  $\frac{1}{10}$ ; corrugated yellow walls,  $\frac{1}{30}$  thick, and containing thin layer of blood-clot.

*Corpus Luteum*  $\frac{1}{4} \times \frac{1}{8}$ ; wall deep orange-brown colour; corrugation barely perceptible; blood-clot  $\frac{1}{8}$  thick, of a dark-red brown, shading off into orange, wall.

*Follicle*  $\frac{1}{4}$ ; lining membrane transparent and but faintly defined. Contents, clear fluid.

*Follicle*  $\frac{1}{4}$ ; close to hylum; clear fluid.

*Follicle*  $\frac{1}{10}$ , with smooth white opaque walls and clear fluid.

No other traces of follicles.

VI. Operation for Myoma, Nov. 25, 1884. A. A., æt. 42. Married. Last cat. Nov. 4 to 14. Excessive loss for years.

*Right Ovary*.—Weight, 78 grains.

Surface of ovary hard and yellowish white in colour; deeply corrugated (sulci,  $\frac{1}{10}$  deep, reminding one of convolutions of brain). Scattered all over surface of ovary, transparent vesicles, two of which were  $\frac{1}{5}$ -inch diameter, the rest minute in size; when vesicles were opened a cup-like depression left with a smooth shining wall; depression in large vesicles  $\frac{1}{2}$  deep.

Corrugated cortex of ovary cartilaginous in section, opaque white in colour, and about  $\frac{1}{10}$  thick.

Close to hylum a thin walled cyst, size of cherry, containing clear fluid and attached by a pedicle  $\frac{3}{10}$  long.

*Corpora Alba*  $\frac{1}{2}$  deep in substance of ovary; corrugated white walls  $\frac{1}{10}$  thick.

Four or five follicles  $\frac{1}{10}$  to  $\frac{1}{6}$  containing clear fluid, and with smooth transparent walls, except that in one walls slightly thickened.

*Corpus Album*,  $\frac{1}{10}$ ; walls,  $\frac{1}{50}$  thick.

No trace of any *Corpus Luteum*.

*Left Ovary*.—Weight, 116 grains.

Anterior surface of ovary smooth and glistening. Posterior surface hard and corrugated like the right ovary.

A thin-walled cyst containing clear fluid, size of cherry, burst in removal of ovary. Attached close to hylum of ovary was a double-pedicated cyst. Scattered over posterior surface of ovary, minute transparent vesicles like those on right ovary.

1. Cyst,  $\frac{1}{2}$  inch diameter, containing clear fluid and with deeply injected, smooth, transparent walls.

Two follicles,  $\frac{1}{5}$ , close to hylum of ovary.

Two follicles  $\frac{1}{12}$ .

No trace of any *Corpus Luteum* or *Corpora Alba*. Fibrous tissue increased about hylum of ovary.

*VII. Operation for Chronic Ovaritis, Nov. 29, 1884. M.B., æt. 20. Single. Last cat. Nov. 17. Typhoid fever two years ago. Intense menstrual pain ever since.*

*Right Ovary.*—Weight, 82 grains.

Outer half of surface of ovary deeply corrugated and indurated. Inner, smooth and but slightly marked with cicatrices. Section showed outer half to be cartilaginous (like right ovary No. 6), the rest of the ovary normal in appearance.

*Corpus Luteum*,  $\frac{1}{3}$ -inch diameter, irregular in shape; outer half of *Corpus Luteum* had yellow layer,  $\frac{1}{20}$  thick, corrugated. Inner half had no distinct lining membrane, but contained a dark clot and serum.

Eight or nine follicles, from  $\frac{1}{2}$  to  $\frac{1}{4}$ -inch, containing clear fluid in normal part of ovary; in changed part traces of two *Corpora Lutea*  $\frac{1}{10}$ -inch diameter; one trace of *Corpus Luteum*,  $\frac{1}{4} \times \frac{1}{10}$ ; walls corrugated,  $\frac{1}{20}$  thick on one side, a thin line on the other, which was depressed by follicle  $\frac{1}{10}$ -inch diameter, with transparent lining membrane and containing clear fluid.

Section through yellow stain on surface of ovary showed remains of *Corpus Luteum* with yellow layer  $\frac{1}{40}$ -inch thick and containing remains of reddish brown organised clot  $\frac{1}{30}$ -inch thick. *Corpus Luteum*  $\frac{1}{8} \times \frac{1}{10}$ ; yellow layer deeply corrugated,  $\frac{1}{20}$ -inch thick.

*Left Ovary.*—Weight, 68 grains.

Commencing corrugation and cartilaginous change close to hylum of ovary at its outer border. On the posterior and inner surface a congested patch  $\frac{3}{4} \times \frac{1}{2}$ -inch, with central dark cicatricial spot.

Section through this showed *Corpus Luteum*  $\frac{1}{2}$ -inch  $\times$   $\frac{1}{3}$ ; yellow layer at point where it had burst—a mere line—gradually thickening and becoming deeply corrugated on the inner surface, containing bright dark-red clot; some congestion of ovary round the *Corpus Luteum*.

Follicles, six or seven,  $\frac{1}{2}$  to  $\frac{1}{8}$ ; clear fluid; transparent lining membrane; one trace *Corpora Alba*,  $\frac{1}{15}$ -inch diameter; follicle  $\frac{1}{3}$ -inch diameter, with clear fluid; walls congested and slightly stained yellow; one trace of *Corpus Luteum*  $\frac{1}{20}$ .

*VIII. Operation. Dec. 2. E. T., æt. 24. Single. Last cat. ended Nov. 20. Intense menstrual pain at irregular periods. Uterus infantile and hardly developed.*

*Right Ovary.*—Weight 105 grains; size  $1\frac{1}{4} \times \frac{3}{4} \times \frac{3}{8}$ . Surface of ovary smooth and glistening posteriorly; opaque and yellow anteriorly.

Ovary full of *follicles* varying in size from  $\frac{1}{8}$  to  $\frac{1}{6}$ -inch diameter; divided from one another by thin transparent walls; a few had thin transparent lining membranes easily detached, and some were stained by effusions of blood in their walls; weight of ovary when fluid had escaped from these follicles, 68 grains; in the only part of ovary in which some ovarian stroma was left there were the remains of a *Corpus Luteum*, about  $\frac{1}{9}$ -inch diameter, with distinct corrugated yellow layer.

*Left Ovary.*—Weight, 138 grains; size,  $1\frac{1}{3} \times \frac{4}{5} \times \frac{2}{5}$ -inch; surface like right ovary, but near posterior border a congested patch,  $\frac{1}{4}$ -inch in diameter, section through which showed *follicle*  $\frac{1}{2}$ -inch in diameter containing blood-clot and with transparent blood-stained lining membrane; ovary on section had a centre of smooth fibrous tissue surrounded by cysts of rather smaller size than those in right ovary, but more of them had blood-stained, easily detached, transparent lining membranes. Remains of *Corpus Luteum*,  $\frac{1}{2} \times \frac{1}{10}$ -inch. Collapsed thin walls,  $\frac{1}{10}$ , and no trace of clot. Trace of *Corpus Luteum*  $\frac{1}{10} \times \frac{1}{10}$ . *Corpus Luteum*,  $\frac{1}{6}$ -inch diameter; corrugated yellow layer,  $\frac{1}{10}$  thick, and containing organised dark clot.

*Follicles* in left ovary very numerous and almost all in outer layer of ovary; weight of ovary when fluid had escaped, 62 grains.

*IX. Operation, Dec. 19. L. S., æt., 23. Single. Last cat. Nov. 27 to 30. Menstruation scanty and painful; uterus infantile—"a mere thread."*

*Right Ovary.*—Weight 153 grains; size  $1\frac{2}{3} \times \frac{6}{10} \times \frac{5}{6}$ .

The surface of the ovary smooth and glistening; on its free border a cicatrice with a small red centre.

(1) Section through this red cicatrice showed *Corpus Luteum*,  $\frac{1}{4} \times \frac{3}{10}$ , a thin corrugated yellow layer, containing a dark red clot with a pale centre.



Remains of five *Corpora Lutea*, varying in size from  $\frac{1}{2}$  to  $\frac{1}{10}$  close to surface of ovary; yellow layer well marked in all, and two containing traces of blood-clot.

Two *Corpora Alba*  $\frac{1}{4}$  diameter.

One *follicle*  $\frac{1}{3}$ , and one  $\frac{1}{5}$ , containing clear fluid close to surface of ovary.

One *follicle*,  $\frac{1}{2}$  deep in tissue of ovary, containing clear fluid.

(2) Two *Corpora Alba*,  $\frac{1}{10}$  and  $\frac{1}{10}$  deep in tissue of ovary.

*Follicles*, four or five,  $\frac{1}{10}$  to  $\frac{1}{4}$ , with clear fluid.

(3) *Follicles*, three or four,  $\frac{1}{2}$  to  $\frac{1}{10}$ , clear fluid.

Two *follicles*,  $\frac{1}{2}$  and  $\frac{1}{3}$ , with transparent lining membranes injected with blood, the largest containing thin blood-clot.

(4) *Follicles*, three or four,  $\frac{1}{10}$  to  $\frac{1}{3}$ , with clear fluid.

(5) *Follicles*, five or six,  $\frac{1}{10}$  to  $\frac{1}{3}$ , with clear fluid. Trace of one *Corpora Alba*.

(6) Trace of *Corpus Luteum*.

*Follicle*,  $\frac{1}{6}$ , with transparent injected membrane and clear fluid.

*Follicles*, four or five,  $\frac{1}{10}$  to  $\frac{1}{3}$ , with clear fluid.

(7) Trace of *Corpus Luteum*.

*Follicles*, four or five,  $\frac{1}{10}$  to  $\frac{1}{3}$ , with clear fluid.

*Left Ovary*.—Weight, 173 grains; size,  $1 \frac{6}{10} \times \frac{9}{10} \times \frac{6}{10}$ .

Surface smooth and glistening; the outer end congested and with recent cicatrice.

(1) Section through the congested portion showed *Corpus Luteum*,  $\frac{6}{10} \times \frac{7}{10}$ , with deeply corrugated walls varying in thickness, and containing firm, dark-red clot, paler in centre.

*Corpora Alba*,  $\frac{1}{9}$ , containing remains of blood-clot. Traces of two *Corpora Alba*.

Three *follicles*,  $\frac{1}{2}$ , close to the surface with clear fluid.

Three *follicles*,  $\frac{1}{10}$ , with clear fluid.

(2) Remains of *Corpus Luteum*,  $\frac{1}{10}$  by  $\frac{1}{4}$ .

(3) Four *Corpora Alba*,  $\frac{1}{10}$ ,  $\frac{1}{12}$ ,  $\frac{1}{3}$ ,  $\frac{1}{6}$ .

(4) *Corpus Luteum*,  $\frac{1}{8} \times \frac{1}{10}$ , with yellow layer and trace of blood-clot.

Numerous *Follicles* with clear fluid, similar in size and appearance to those of right ovary.

X. Operation for Chronic Ovaritis, Jan. 7, 1885. A.B., æt. 31.

Single. Last cat. about Dec. 20.

*Right Ovary*.—Weight, 77 grains; length,  $1 \frac{1}{10} \times \frac{8}{10} \times \frac{6}{10}$ .

Outer end of ovary congested, and at this point was ruptured in

removal of ovary, allowing the contents of a recent follicle to escape. The rest of the surface of ovary smooth and of an opaque yellowish white colour, with minute pearly spots. At one place a slightly puckered yellowish scar.

(1) Section through the congested end of ovary showed it to be occupied by a *follicle*,  $\frac{1}{2}$ -inch diameter; ill-defined walls of a fawn colour, very faintly corrugated and with numerous red points. Some force was needed to separate these walls from the ovary. The membrane covering these walls and that of the cavity left on their removal were smooth and glistening, but covered with minute capillary vessels injected with bright blood, which was in many places effused.

Five *follicles*, about  $\frac{1}{8}$ , with clear contents. Traces of two *Corpora Lutea*,  $\frac{1}{10}$ -inch diameter.

(2) Section through puckered scar on surface of ovary showed remains of *Corpus Luteum*,  $\frac{1}{8} \times \frac{1}{4}$ ; walls pale yellow,  $\frac{1}{20}$  thick, corrugation, but faintly marked; thin red clot in cavity.

(3) *Corpora Alba*,  $\frac{1}{12}$ .

(4) *Follicles*, three or four,  $\frac{1}{4}$  to  $\frac{1}{10}$ , with clear fluid; walls transparent and slightly injected.

(5) Trace of *Corpus Luteum*,  $\frac{1}{20}$ .

*Follicles*, two or three,  $\frac{1}{8}$  to  $\frac{1}{10}$ , with clear fluid and injected transparent membranes, close to hylum.

*Follicle*,  $\frac{1}{4}$ -inch diameter; walls transparent and injected, and in one part slightly yellow and opaque; near hylum, attached by a short pedicle, a cartilaginous nodule,  $\frac{1}{10} \times \frac{1}{8}$ .

*Left Ovary*.—Weight, 58 grains; size,  $1 \times \frac{7}{10} \times \frac{4}{10}$  inch.

Surface of ovary smooth; at outer border a recent linear opening (possibly a tear on removal of ovary) slight congestion of ovary around this. On outer end circular depression,  $\frac{1}{3}$ -inch across; colour purplish, with a pink margin and linear tear into tissue of ovary.

(1) Section of ovary through this depression showed that the tear led into a collapsed cavity containing a small red clot.

Inner or deeper side of cavity formed by a thin, smooth, pale-yellow wall, but the wall of cyst elsewhere transparent and slightly injected; clot slightly adherent to yellow layer was thin and membranous.

Tear at opposite end of ovary led into a *follicle*, about  $\frac{1}{8}$ -inch diameter, with perfectly transparent walls, containing a little clear fluid.

Below this remains of *Corpus Luteum*,  $\frac{1}{5} \times \frac{1}{10}$ , with yellow layer,  $\frac{1}{30}$  thick, and containing dark clot,

Three *follicles*,  $\frac{1}{5}$  to  $\frac{1}{4}$ , containing clear fluid.

In the rest of the ovary numerous transparent *follicles*,  $\frac{1}{5}$  to  $\frac{1}{8}$ , but no trace of any *Corpora Alba*.

*XI. Operation for Chronic Ovaritis, Jan. 26th, 1885. E. H., æt. 20. Single. Last cat. Jan. 15 to 22. Last July left ovary removed by Dr. Malins; pain and profuse loss have continued since.*

*Right Ovary*.—Weight, 108 grains; size  $\frac{1}{4} \times \frac{3}{10} \times \frac{6}{10}$ .

Surface of ovary smooth; on the lower border transparent follicles  $\frac{3}{10}$ , protruding with a few capillary vessels spreading over its walls. On the inner and anterior surface a linear cicatrice slightly stained with blood. Below protruding cyst remains of *Corpus Luteum*,  $\frac{1}{5} \times \frac{1}{9}$ ; walls slightly corrugated; pale opaque yellow,  $\frac{1}{20}$  thick; no contents.

Trace of *Corpus Luteum*,  $\frac{1}{9} \times \frac{1}{15}$ . Five *follicles*,  $\frac{1}{5}$  to  $\frac{1}{4}$ , containing clear fluid.

Section through the linear cicatrice showed collapsed *follicle* lined with a slightly congested transparent membrane, easily stripped from the walls; walls of follicle somewhat turgid, but no trace of any effusion of blood in cyst.

*Follicle*, with walls slightly infiltrated with dark blood; lining membrane easily stripped away, was transparent though congested; about  $\frac{1}{30}$  thick.

Numerous *follicles*, from  $\frac{1}{20}$  to  $\frac{1}{5}$ , scattered throughout ovary containing clear fluid; no trace of any *Corpora Alba*.

Some increase of connective tissue of ovary.

*XII. Operation, Jan. 26, 1885. J. N., æt. 42. Married. Last cat. ended Jan. 10. Myoma with profuse loss.*

*Right Ovary*.—Weight, 107 grains; size  $1\frac{3}{10} \times \frac{9}{10} \times \frac{1}{2}$ .

Surface of ovary puckered, sulci  $\frac{1}{8}$  deep. On lower border a loose baglike congested protrusion, but no distinct opening into the cavity could be distinguished.

(1) Section through this showed a *collapsed cavity*, size of a small cherry, containing a small quantity of pus-like fluid. Lining membrane thin and glistening, easily stripped off walls; membrane in-

tensely congested, with large capillary vessels developed all over it; but slight congestion of walls of cavity.

(2) Two *follicles*,  $\frac{1}{8}$  and  $\frac{1}{6}$ ; lining membranes transparent and slightly congested, could not be easily stripped off walls of follicles. Contents, clear fluid.

(3) Two *follicles*,  $\frac{1}{5}$  and  $\frac{1}{4}$ , with clear fluid and slightly congested lining membranes, easily stripped off walls.

(4) *Follicle*,  $\frac{1}{4}$ , clear fluid, with slightly congested lining membrane, which could not be easily stripped.

(5) *An irregular cavity*, size of a large pea, with slightly opaque, smooth, white walls, containing clear fluid.

Near surface of ovary, *follicle*,  $\frac{1}{5}$ , containing clear fluid.

Throughout ovary no trace of any *Corpus Luteum* or *Corpora Alba*.

Some increase of fibrous tissue.

*Left Ovary*.—Weight, 80 grains; size not taken.

Outer half of ovary puckered with deep sulci. Inner, smooth, and glistening.

A *cyst*, size of a large cherry, containing clear fluid, with smooth walls; bulging into this cyst were two smaller ones,  $\frac{1}{4}$  and  $\frac{1}{10}$ -inch diameter.

Two or three *follicles*,  $\frac{1}{4}$  to  $\frac{1}{6}$ .

No trace of any *Corpus Luteum* or *Corpora Alba*.

Two *follicles*,  $\frac{1}{4}$  and  $\frac{1}{6}$ , with slightly injected transparent lining membranes; clear fluid.

### XIII. Operation, Feb. 25. A. S., *æt.* 25. Married. Case of gonorrhæal inflammation for five or six years.

*Left Ovary*.—Weight, 53 grains.

Ovary torn in removal. Strong fibrous adhesions between broad ligament and ovary, too strong to be broken down.

Anterior surface of ovary irregular, corrugated, and cartilaginous in appearance.

Cartilaginous cortex on section was about  $\frac{1}{10}$  thick.

(1) *Cavity*,  $\frac{1}{3}$ -inch in diameter, with thick, brown, granular contents.

(2) *Corpus Luteum*, with bright orange walls containing small dark-red blood-clot.

(3) *Corpus Luteum*, with thin layer of ovarian tissue spread over

it, protruding from surface of ovary, the size of a small pea; walls, bright orange,  $\frac{1}{40}$  thick, soft and easily stripped away, leaving a smooth glistening surface to the cavity. Contents, soft blood-clot.

(4) *Corpora Alba*,  $\frac{1}{10}$ , with trace of brown altered blood; no normal ovarian tissue or follicles.

In removing ovary a *cyst* ruptured, containing brown altered blood like the first one mentioned.

*Right Ovary*.—Weight, 23 grains.

Had shrunk into an irregular, corrugated, cartilaginous body  $\frac{3}{4} \times \frac{1}{2} \times \frac{1}{4}$ . In this there was no trace of any ovarian tissue, except the puckered and thickened cortex of the ovary.

*XIV. Operation for Chronic Ovaritis, March 27. J. R., æt. 26. Married. Last cat. began March 1. Menstruation profuse, lasting seven or eight days.*

*Right Ovary*.—Weight, 167 grains; size,  $1\frac{1}{3} \times 1\frac{1}{8} \times \frac{2}{5}$ .

Surface generally smooth, but in two or three places roughened and thickened.

On its free border an irregular puckered scar.

(1) Section through this scar showed a *Corpora Alba*,  $\frac{1}{4} \times \frac{3}{10}$ , with thin, corrugated, opaque, white walls, except that at one side, where a second follicle pressed it, it was smooth and yellow. Contained a small, firmly-organised clot, inseparable from the walls of the follicle.

Eight *follicles*,  $\frac{1}{10}$  to  $\frac{4}{10}$ , containing clear fluid; lining membranes thin and transparent, in two cases somewhat injected.

(2) Remains of three *Corpora Alba*,  $\frac{1}{8}$  to  $\frac{1}{12}$ .

Three *follicles* containing clear fluid; thin transparent lining membranes.

(3) Three *follicles* with clear fluid; transparent lining membranes.

(4) Remains of two *Corpora Alba*, one  $\frac{1}{10}$ , the other  $\frac{2}{5} \times \frac{1}{10}$ .

Remains of two *Corpora Lutea*, opaque yellow walls, thin and slightly corrugated.

In the larger, remains of clot; in the smaller, slight red staining.

Four or five *follicles* with clear fluid.

(5) Five or six *follicles* with clear fluid.

*Left Ovary*.—Weight, 145 grains; size  $1\frac{1}{4} \times 1\frac{1}{10} \times \frac{2}{5}$ .

Surface less rough and thickened than in right ovary. On the free border a yellow-red patch,  $\frac{6}{10} \times \frac{3}{10}$  in size, with capillary

vessels coursing all over it, and a large irregular opening in the centre. A sharp line of division between the congested portion and the pearly white ovarian tissue. The capillary vessels unusually developed over the surface of ovary. A second yellow patch on surface of ovary with an opening into a cavity below it.

(1) Section through the large patch opened a large *Corpus Luteum*,  $\frac{3}{4} \times \frac{1}{2}$ , with deeply corrugated walls of varying thickness of a yellow fawn colour and containing a soft, bright-red clot, which could not be torn away from the walls without tearing them in some places.

Nine *follicles* with clear fluid and transparent walls, two of these nine having the walls congested.

(2) Section through the second patch showed remains of *Corpus Luteum*,  $\frac{1}{10} \times \frac{1}{6}$ , with thick, opaque, yellow walls, very slightly corrugated and containing a thin red clot which could be separated from the walls.

(3) Trace of *Corpus Luteum*,  $\frac{1}{15}$ .

Six or seven *follicles* with clear fluid; walls somewhat injected.

(4) Two or three *follicles* with clear fluid and injected walls.

*XV. Operation, March 30. H. H., æt. 28. Married. Last cat. March 11 to 18. Small fibroid.*

*Right Ovary*.—Weight, 150 grains; size  $1\frac{1}{2} \times \frac{3}{4} \times \frac{3}{5}$ .

Shape irregular; surface smooth, marked by merely superficial cicatrices.

(1) Section showed the whole ovarian tissue oedematous and congested with numerous *follicles*, varying in size from  $\frac{1}{10}$  to  $\frac{1}{5}$ , containing clear fluid and lined with a thin transparent membrane, easily stripped from the walls, but with capillary vessels greatly developed in them.

2 *Corpora Alba*, one  $\frac{1}{5}$  and one  $\frac{1}{10}$ .

(2) Opaque, white, corrugated body, walls  $\frac{1}{10}$  thick, easily separated from cavity, which was lined with a white, semi-transparent membrane.

*Corpora Alba*,  $\frac{1}{5}$  in diameter.

Traces of *Corpus Luteum*,  $\frac{1}{15}$ .

Numerous *follicles* with clear fluid.

(3) *Follicles* with clear fluid.

(4) One trace of *Corpus Luteum*,  $\frac{1}{10}$ .

Numerous *follicles* with clear fluid.

(5) Trace of *Corpora Alba*,  $\frac{1}{15}$ .

Orange stain,  $\frac{1}{20}$  diameter.

*Follicle*,  $\frac{1}{5}$ , with transparent walls stained brown, and containing remains of small, dark-brown clot. Numerous *follicles* with clear fluid.

*Left Ovary*.—Weight, 234 grains; size,  $1\frac{3}{4} \times 1 \times \frac{3}{5}$ .

Surface smooth, somewhat congested.

(1) Section showed tissue congested and œdematous; at one extremity a congested *Corpus Luteum*  $\frac{1}{2}$ -inch in diameter, with a thin, corrugated, yellow layer,  $\frac{1}{20}$  thick, and cavity filled with soft, dark-red clot. Ovarian tissue congested around border of *Corpus Luteum* for about  $\frac{1}{10}$  of an inch.

(2) *Corpus Luteum*,  $\frac{3}{10} \times \frac{1}{7}$ , with corrugated walls,  $\frac{1}{20}$  thick, somewhat firmer and more opaque than in the more recent yellow *Corpora Lutea*, and containing a bright red clot.

One *Corpora Alba*,  $\frac{1}{5}$ , containing a slightly translucent, white fibrous mas (œdematous); a second *Corpora Alba* containing a hard, corrugated, white nodule, like the one mentioned in the right ovary.

*Corpora Alba*,  $\frac{1}{6} \times \frac{1}{20}$ , containing a thin, white translucent mass.

(3) Trace of *Corpora Alba*.

The rest of the ovary contained numerous follicles with clear fluid and somewhat congested walls, but no other *Corpus Luteum*, and but one small *Corpora Alba* with translucent contents.

#### XVI. Operation for Double Pyosalpinx, April 10, 1885. E.

W., æt. 29. Married. Last cat. March 22 to April 5.  
Scanty, painful.

*Right Ovary*.—Tube and broad ligament bound by dense adhesions to the ovary, the fimbriated extremity of the tube firmly adherent to ovary, but orifice still patent.

Surface of ovary smooth, except where roughened by adhesions. On its outer border a purplish red patch; in its centre an opening  $\frac{1}{8}$ -inch in diameter, from which protruded a dark-red clot.

(1) Section through this opened a cavity  $\frac{1}{2} \times \frac{3}{10}$  in diameter, with no defined walls; the tissue round infiltrated and stained with blood. A soft, semi-transparent, membranous cyst, with numerous capillaries in its walls, could be easily separated from this cavity. This cyst was collapsed and contained but a small quantity of soft

red clot, but the cyst was in many places deeply stained with blood, and it was part of this which protruded on the surface of the ovary. Parenchyma of the ovary was changed into dense fibrous tissue. Below the part of the ovary, to which the fimbriated extremity of the tube adhered, were two *follicles*,  $\frac{1}{5}$  in diameter, one containing clear fluid, the other stained with blood.

Two *follicles*, about  $\frac{1}{10}$ , with clear fluid.

(2) A collapsed *follicle*,  $\frac{1}{5}$ , with defined fibrous walls, lined with a thin, transparent, congested membrane.

*Follicle*,  $\frac{1}{8}$ , with slightly stained yellow walls and congested transparent membrane.

*Follicle*,  $\frac{1}{5}$ , with rigid semi-transparent walls,  $\frac{1}{30}$  thick; clear fluid.

Two *follicles*,  $\frac{1}{10}$  in size, with rigid semi-transparent walls  $\frac{1}{30}$  thick. Transparent congested membranes lined both these follicles.

(3) *Follicle*,  $\frac{1}{5}$ , with clear fluid; walls whitish and well defined.

(4) Three *follicles* with thin, congested, transparent walls, containing clear fluid.

*Left Ovary*.—The tube and broad ligament firmly adherent to the ovary, the fimbriated extremity of the tube firmly bound down and opening of tube occluded. Surface of ovary smooth except over the lower border, which was roughened and nodular. On the inner end a smooth purplish patch.

(1) Section through this showed a cavity,  $\frac{1}{3}$ -inch, containing clear fluid and lined with thin transparent and very slightly congested membrane. Bulging into this cavity was a *follicle*,  $\frac{1}{5}$ , with clear fluid.

At the free border of the ovary a *Corpus Luteum*,  $\frac{1}{5} \times \frac{1}{6}$ , with slightly corrugated yellow walls,  $\frac{1}{30}$ , thick, and containing small, dark-red clot.

(2) Trace of *Corpus Luteum*,  $\frac{1}{5} \times \frac{1}{20}$ .

Seven *follicles*,  $\frac{1}{4}$  to  $\frac{1}{10}$ , with clear fluid; in most cases rigid semi-transparent walls; all of these and the yellow follicles were close to the surface of the ovary.

Below the outer yellow follicle was a *Corpora Alba*,  $\frac{1}{10} \times \frac{1}{12}$ .

*Corpus Luteum*,  $\frac{1}{5} \times \frac{1}{7}$ , with thin, corrugated, yellow walls containing dark-red clot.

Trace of *Corpus Luteum*,  $\frac{1}{6} \times \frac{1}{9}$ .

A *follicle*,  $\frac{1}{6}$ , with clear fluid.

Three *follicles*,  $\frac{1}{8}$  to  $\frac{1}{7}$ , with rigid walls, thin and slightly congested lining membranes; clear fluid contents.



(3) Trace of *Corpora Alba*,  $\frac{1}{5} \times \frac{1}{12}$ .

Three *follicles*,  $\frac{1}{6}$  to  $\frac{1}{8}$ , with rigid walls and thin, slightly congested lining membranes.

(4) *Corpus Luteum*,  $\frac{1}{4} \times \frac{1}{6}$ , with thin, slightly corrugated, yellow walls, containing a thin red clot.

Trace of *Corpus Luteum*.

(5) Three or four *follicles*,  $\frac{1}{5}$  to  $\frac{1}{12}$ , with rigid walls and thin, slightly congested lining membranes.

# XVII. Operation for Double Pyosalpinx. April 10, 1885.

S. D. æt. 33. Married. Last cat. March 29 to April 4. Loss profuse, painful.

*Right Ovary*.—Tube adherent to broad ligament and ovary. On the posterior surface of broad ligament, and extending over part of the ovary, the serous membrane was raised and distended with fluid, forming a flaccid, irregular cyst, containing about a drachm of turbid yellow fluid.

The surface of the ovary, forming part of floor of cyst, smooth and shining, except in two places, where it was eroded, and had projecting cartilaginous nodules.

The rest of the surface of the ovary slightly roughened with adhesions, otherwise smooth and glistening, with numerous transparent follicles shining through.

*Right Ovary*.—Weight 120 grains; size,  $1 \times \frac{3}{4} \times \frac{1}{2}$ .

(1) Four *follicles*,  $\frac{1}{4}$  to  $\frac{2}{5}$  in size, filled with clear fluid and with thin transparent slightly congested walls.

Remains of *Corpus Luteum*,  $\frac{1}{8}$ , with thin, slightly corrugated, orange walls, containing a dark, greenish-brown clot.

Close to hylum of ovary three *Corpora Alba*,  $\frac{1}{5} \times \frac{1}{6}$ ,  $\frac{1}{6} \times \frac{1}{8}$ , and  $\frac{1}{8}$ .

A trace of two *Corpora Alba*.

Trace of *Corpus Luteum* of a deep, yellow-brown colour.

(2) *Follicle*,  $\frac{1}{3}$ , containing clear fluid and walls in one place stained yellow.

Two or three *follicles*,  $\frac{1}{10}$  to  $\frac{1}{5}$ , with clear fluid.

(3) Four or five *follicles*,  $\frac{1}{10} \times \frac{1}{4}$ , with clear fluid.

(4) Six *Corpora Alba*; size  $\frac{1}{6}$  to  $\frac{1}{10}$ ; in two cases a corrugated nodule could be shelled out, leaving a smooth white cavity.

*Left Ovary*.—Tube and broad ligament bound to ovary in an

inseparable mass, the fimbriated extremity of the tube patent, but so bound down that no movement was possible; omentum adherent to ovary; surface of ovary covered with ragged adhesions, otherwise perfectly smooth.

(1) Section showed a cavity,  $\frac{8}{10}$  in diameter, containing blood-stained fluid. This cavity occupied the centre of the ovary, the ovarian tissue being spread over it to the thickness of  $\frac{1}{8}$  of an inch, except at the hylum, where it was about  $\frac{1}{15}$ . The walls of the cavity were smooth, transparent, and glistening, except at the part towards the lower border of the ovary, where there was a firm organised clot,  $\frac{1}{2} + \frac{3}{10} \times \frac{1}{10}$ ; the walls about the clot were slightly yellow and opaque, but quite thin, and with no appearance of corrugation.

Two *follicles*,  $\frac{1}{5}$ , with clear fluid, protruding under the walls of the cyst.

(2) Two *Corpora Alba*.

Numerous *follicles* containing clear fluid.

(3) Two or three small *follicles* with clear fluid.

(4) *Corpora Alba*,  $\frac{1}{5} \times \frac{1}{10}$ .

(5) One or two *follicles* with clear fluid.

(6) One or two *follicles* with clear fluid.

*XVIII. Operation for Myoma, March 20, 1885. M. J. T., æt. 50. Married. Last cat. March 18 (specimen preserved in spirit).*

Surface of both ovaries deeply corrugated. No appearance on surface of ovary of any recent ruptured cyst.

(1) *Follicle*, with coagulated white clot, part of the wall stained with blood.

(2) Deep in tissue of ovary, *Corpus Luteum*,  $\frac{1}{3} \times \frac{1}{5}$ ; walls  $\frac{1}{20}$  thick; pale red clot filling cavity.

(3) *Corpus Luteum*,  $\frac{1}{4} \times \frac{1}{5}$ ; corrugation but slightly marked; walls  $\frac{1}{20}$  thick; containing a dark red clot.

*Left Ovary*.—Red projection size of small pea on lower border.

(1) Section through this projection showed it to be a follicle with thin walls, stained red, containing a dark red clot.

*Follicle*, with thin membranous walls and white clot (coagulated serum). Below this, *Corpus Luteum*  $\frac{1}{2} \times \frac{1}{4}$ ; corrugated yellow walls,  $\frac{1}{10}$  thick, a pale red clot, filling the whole cavity.

Remains of three *Corpora Alba*.

Two *follicles* with clear fluid.

(2) Traces of three *Corpora Lutea* and of two *Corpora Alba*.

(3) *Follicle*, containing red clot but no defined walls.

Trace of two *Corpora Lutea*.

Two *follicles* with clear fluid.

*XIX. Operation, April 13, 1885. E. B., æt. 25. Single. Retroverted and adherent uterus; intense pain. Last cat. March 21 to 25.*

*Right Ovary*.—Weight, 156 grains; size  $1\frac{1}{2} \times 1 \times \frac{1}{2}$ .

Surface of ovary smooth, with numerous *follicles* showing through. At lower border a congested patch of a yellow colour and deep red in centre.

(1) Section through this showed a *Corpus Luteum*,  $\frac{1}{2}$ , with bright yellow corrugated walls, and filled with a firm dark red clot. Close to hylum of ovary, *Corpus Luteum*,  $\frac{1}{3}$ , with thin yellow walls, with but slight trace of corrugation, and filled with dark clot commencing to break down into granular matter. Trace of *Corpus Luteum*.

Close to hylum of ovary trace of *Corpus Luteum*.

Near surface of ovary two *Corpora Alba*,  $\frac{1}{6}$  and  $\frac{1}{10}$ ; corrugated walls less cartilaginous than usual.

(2) *Corpora Alba*,  $\frac{1}{6}$ .

Two or three *follicles* with clear fluid,  $\frac{1}{5}$  to  $\frac{1}{10}$ .

(3) Five or six *follicles*,  $\frac{1}{5}$  to  $\frac{1}{20}$ , with clear fluid. Trace of two *Corpora Alba*.

(4) Five or six *follicles*,  $\frac{1}{5}$  to  $\frac{1}{2}$ , with clear fluid.

(5) Three or four *follicles*,  $\frac{1}{5}$  to  $\frac{1}{2}$ , with clear fluid.

(6) Trace of two *Corpora Lutea*. Corrugation still marked; and in one thin red line in centre (remains of blood-clot).

Two *follicles*,  $\frac{1}{5}$ , with clear fluid and deeply congested thin transparent lining membranes; remains of two *Corpora Alba*.

(7) Four *follicles*,  $\frac{1}{6}$  to  $\frac{1}{20}$ , with clear fluid.

*Left Ovary*.—Weight, 95 grains; size,  $1\frac{3}{4} \times \frac{1}{2} \times \frac{1}{2}$ .

Surface of ovary smooth with transparent *follicles* shining through.

(1) *Corpus Luteum*,  $\frac{1}{5} \times \frac{1}{8}$ , with thin yellow walls but slightly corrugated, and containing a small blood-clot which appeared almost absorbed and was red only at one point.

Two remains of *Corpora Alba*,  $\frac{1}{6}$  and  $\frac{1}{5} \times \frac{1}{8}$ .

A dark stain, apparently owing to effusion of blood in the tissue of the ovary.

Numerous *follicles*,  $\frac{1}{5}$  to  $\frac{1}{10}$ , with clear fluid. The largest with congested, thin, transparent lining membranes.

(2) *Corpora Alba*,  $\frac{1}{4} \times \frac{1}{8}$ , with corrugated walls; the outer half thin and stained with blood. Fluid blood or serum escaped when it was divided.

Two or three *follicles* with clear fluid.

(3) Four or five *follicles* with clear fluid,  $\frac{1}{5}$  to  $\frac{1}{10}$ ; one with deeply congested lining membrane.

(4) Five or six *follicles* with clear fluid, one with deeply congested walls.

*Follicle*,  $\frac{1}{6}$ , with clear fluid, and transparent walls  $\frac{1}{40}$  thick and with blood effused into it.

(5) Five or six *follicles*,  $\frac{1}{5}$  to  $\frac{1}{10}$ , with clear fluid; tissue of ovary somewhat congested, with well-marked capillaries developed in it.

*XX. Operation for Myoma, April 14, 1885. M. W., æt. 34. Single. Last cat. March 30 to April. Loss profuse and painful.*

*Right Ovary*.—Weight, 103 grains; size,  $1\frac{1}{4} \times \frac{3}{4} \times \frac{1}{2}$ .

Surface of ovary corrugated. One sulci  $\frac{1}{5}$  of an inch deep extended across ovary. Inner half of surface of ovary cartilaginous.

(1) Section showed the cortex of inner half of ovary,  $\frac{1}{20}$  thick, dense and white of texture, with white fibrous bands extending into stroma of ovary. Numerous capillary vessels developed in stroma.

Remains of *Corpus Luteum*,  $\frac{1}{5} \times \frac{1}{8}$ , with corrugated yellow layer  $\frac{1}{20}$  thick.

Remains of two *Corpora Alba*,  $\frac{1}{10}$  and  $\frac{1}{8}$ .

*Follicle* with thin, brownish, semi-transparent walls.

Four *follicles*,  $\frac{1}{20}$  to  $\frac{1}{5}$ , with clear fluid.

(2) Trace of *Corpus Luteum*.

Three or four *follicles*,  $\frac{1}{10}$  to  $\frac{1}{5}$ , with clear fluid.

(3) *Follicle*,  $\frac{1}{6}$ , with clear, transparent lining membranes containing blood-stained serum. Three or four *follicles*,  $\frac{1}{10}$  to  $\frac{1}{6}$ , with clear fluid.

(4) Trace of *Corpus Luteum*,  $\frac{1}{6} \times \frac{1}{10}$ , with transparent substance in centre like a decolorised clot.

*Corpora Alba*,  $\frac{1}{10}$ , close to surface of ovary.

*Corpora Alba*,  $\frac{1}{9} \times \frac{1}{15}$ , deep in tissue of ovary.

Remains of *Corpus Luteum*,  $\frac{1}{4}$ , with a small blood-stained cyst occupying one corner of it.

Four *follicles*,  $\frac{1}{20} \times \frac{1}{5}$ , with clear fluid.

(5) A *follicle*,  $\frac{1}{5}$ , with thin lining membrane, infiltrated with blood, containing blood-stained fluid.

*Follicle*,  $\frac{1}{5}$ , transparent congested walls, containing clear fluid.

A *follicle*,  $\frac{1}{6}$ , with transparent congested walls, containing clear fluid.

Two or three *follicles* with clear fluid.

*Left Ovary*.—Weight, 116 grains; size,  $1\frac{1}{4} \times \frac{3}{4} \times \frac{7}{16}$ .

Surface of ovary smooth and shining, with dilated capillaries anteriorly. Posteriorly surface roughened and opaque with slight corrugation.

(1) Cortex somewhat thickened,  $\frac{1}{30}$  thick.

Two or three *follicles* with clear fluid.

(2) *Follicle*,  $\frac{1}{2}$ -inch diameter, with transparent, congested lining membrane, containing clear fluid.

Remains of *Corpus Luteum*,  $\frac{1}{5}$ , with yellow walls  $\frac{1}{40}$  thick, and a thin transparent clot in it.

Trace of *Corpora Alba* close to hylum of ovary.

Three or four *follicles*,  $\frac{1}{20}$  to  $\frac{1}{6}$ , with clear fluid.

(3) Three or four *follicles*,  $\frac{1}{20}$  to  $\frac{1}{6}$ , with clear fluid.

(4) One or two *follicles* with clear fluid.

Trace of *Corpus Luteum*,  $\frac{1}{4}$ .

(5) *Corpora Alba*,  $\frac{1}{6}$ .

Four or five *follicles*,  $\frac{1}{10}$  to  $\frac{1}{5}$ , with thin congested walls, containing clear fluid.

XXI. Operation for Double Pyosalpinx, April 16, 1885. A. H., æt. 22. Single. Last cat. lasted two weeks, and ceased on April 12. Loss profuse.

*Right Ovary* contained a large cyst, which burst on removal of the ovary. Cyst, one inch, with walls thin and congested, containing blood-clot.

(1) Two or three *follicles*,  $\frac{1}{10}$  to  $\frac{1}{6}$ , with clear fluid.

(2) *Corpus Luteum*,  $\frac{1}{5}$ , with semi-transparent yellow walls  $\frac{1}{40}$  thick. No appearance of corrugation or of any contents, the walls having collapsed.

Trace of *Corpus Luteum*,  $\frac{1}{20}$ .

Two *follicles*,  $\frac{1}{5}$ , with clear fluid.

(3) *Follicle*,  $\frac{1}{10}$ , with semi-transparent white walls, clear fluid.

(4) Two or three *follicles*,  $\frac{1}{10}$  to  $\frac{1}{6}$ , with clear fluid.

*Left Ovary*.—Weight, 70 grains; size,  $\frac{3}{4} \times \frac{3}{4} \times \frac{1}{2}$ .

Surface smooth and opaque, except where roughened by adhesions.

(1) Two or three *follicles*,  $\frac{1}{5}$  to  $\frac{1}{10}$ , with clear fluid.

(2) Two or three *follicles*,  $\frac{1}{5}$  to  $\frac{1}{10}$ , with clear fluid.

(3) One or two *follicles* with clear fluid.

(4) Three or four *follicles*,  $\frac{1}{6}$  to  $\frac{1}{10}$ , with clear fluid.

Trace of *Corpus Luteum*,  $\frac{1}{6} \times \frac{1}{20}$ .

(5) Three or four *follicles*,  $\frac{1}{6} \times \frac{1}{10}$ , with clear fluid.

No appearance in either ovary of opaque white follicles. Some irregular thickening of cortex of both ovaries, but no corrugation of the surface.

*XXII. Operation, April 25. E. W., æt. 35. Single. Last cat. April 18 to 25. Small myoma with pain at periods.*

*Right Ovary*.—Weight, 98 grains; size  $1\frac{1}{4} \times \frac{3}{4} \times \frac{1}{2}$ .

Surface of ovary was anteriorly covered with minute vesicles containing clear fluid, and leaving cup-like depressions when fluid escaped. Surface slightly puckered, and marked with eleven purplish projections, size of a small pea. On the free border of ovary a recent cicatrice.

(1) Section through this cicatrice showed *Corpus Luteum*,  $\frac{1}{5} \times \frac{1}{4}$ , with corrugated yellow walls,  $\frac{1}{30}$  thick, and containing the thin remains of a blood-clot.

Remains of four *Corpora Alba*,  $\frac{1}{15}$ . White nodules, easily removed.

Two *follicles*,  $\frac{1}{5}$ , with clear fluid; slightly injected transparent membranes (these were two of the purplish projections on the surface).

Trace of *Corpus Luteum*,  $\frac{1}{10}$ .

(2) Four *follicles*,  $\frac{1}{10}$  to  $\frac{1}{5}$ , with clear fluid and slightly congested transparent membranes.

One *follicle*,  $\frac{1}{5}$ , containing clear fluid, with transparent, deeply congested lining membranes, beneath half of which was effused a soft black clot.

Numerous (twelve at least) *Corpora Alba*, from  $\frac{1}{10}$  to  $\frac{1}{15}$ , with less corrugation than usual. These *Corpora Alba* were soft and oedematous.

(3) *Corpus Luteum*,  $\frac{1}{9}$ , with thin, faintly corrugated walls, containing a semi-transparent body with a light brown centre.

Three *follicles*,  $\frac{1}{5}$ , with clear fluid and transparent congested walls.

Two or three *Corpora Alba*.

(4) One trace of *Corpus Luteum*,  $\frac{1}{12}$ .

Six or seven *Corpora Alba*,  $\frac{1}{8}$  to  $\frac{1}{12}$ .

Four *follicles*, with clear fluid and congested, transparent membranes, one with small blood-clot effused under the membranes.

*Left Ovary*.—Weight, 110 grains; size,  $1\frac{1}{4} \times \frac{3}{4} \times \frac{1}{2}$ .

A few vesicles scattered over it as in right ovary. Surface, anteriorly, rather puckered; posteriorly smoother. On the free border a cyst the size of a pea, filled with clear yellow serum, protruded. A soft ragged tear in ovary, nearly  $\frac{1}{2}$ -inch across; probably opening was enlarged on removal of ovary.

(1) Section through this tear showed *Corpus Luteum*,  $\frac{1}{2}$ -inch in diameter, with soft red substance filling cavity, which appeared to be the early stage of a yellow layer. It was a soft, semi-transparent, fawn-coloured substance, through which numerous fine capillaries were distributed. The mass could be stripped out of the cavity, its under surface being smooth, shiny, and transparent, leaving a similar smooth surface lining the cavity; in one place the lining membrane of cavity was becoming opaque, and in one or two places there was black effused blood in the yellow layer.

Two or three *follicles* with clear fluid.

Five or six *Corpora Alba*  $\frac{1}{8}$  to  $\frac{1}{10}$ .

One remains of *Corpus Luteum*,  $\frac{1}{6} \times \frac{1}{15}$ , with very thin yellow walls, and containing a dark clot. Below cyst with clear yellow serum a *Corpus Luteum*,  $\frac{1}{5}$  by  $\frac{1}{10}$ , with deeply-corrugated, bright yellow walls and containing soft black clot.

(2) Two or three *follicles*,  $\frac{1}{5}$  by  $\frac{1}{7}$ , with clear fluid and transparent congested lining membranes.

Trace of two *Corpora Lutea*.

Trace of three *Corpora Alba*,  $\frac{1}{10}$ .

(3) Two *follicles* with clear fluid.

(4) Remains of *Corpus Luteum*,  $\frac{1}{5}$ , with bright yellow walls,  $\frac{1}{10}$  thick, containing a mere speck of a clot.

Two or three *follicles* with clear fluid ; slightly congested membranes.

(5) Four or five *follicles* with clear fluid and slightly congested membranes.

*Corpora Alba*,  $\frac{1}{8}$  ; the opaque corrugated white walls were stained slightly yellow on one side and contained the trace of a clot.

*XXIII. Operation for Chronic Ovaritis, May 4, 1885. S. F., et. 25. Single. Last cat. April 20 to May 4. Uterus retroflexed and bound down. Loss painful.*

*Right Ovary*.—Weight, 150 grains ; size  $1\frac{1}{4} \times 1 \times \frac{1}{2}$ .

Surface of ovary smooth and slightly puckered. On lower border a congested patch with two ragged openings through which a red clot appears, with large capillary vessels running towards it from all parts of the ovary.

(1) Section through the congested patch showed *Corpus Luteum*,  $\frac{1}{2} \times \frac{1}{3}$ , with well-marked, deeply-corrugated, fawn-colored walls,  $\frac{1}{30}$  thick, containing dark-red clot. *Corpus Luteum* of a trefoil shape.

Remains of *Corpus Luteum*,  $\frac{1}{4} \times \frac{1}{8}$ , with deep yellow, slightly corrugated walls, containing a thin dark red clot.

Four *follicles*,  $\frac{1}{11}$  to  $\frac{1}{6}$ , containing clear fluid ; ovarian stroma oedematous and fibrous tissue increased in amount.

(2) Trace of *Corpus Luteum*,  $\frac{1}{4} \times \frac{1}{10}$  ; bright orange in colour.

Six or seven *follicles*,  $\frac{1}{10}$  to  $\frac{1}{6}$ , with clear fluid.

(3) Six or seven *follicles*,  $\frac{1}{10}$  to  $\frac{1}{6}$ , with clear fluid ; the walls in two or three were slightly congested, and in all, when the fluid had escaped, no appearance of transparent lining membrane ; but the walls were slightly opaque and white.

(4) Trace of *Corpus Luteum* ; an orange streak.

*Follicle*,  $\frac{1}{7}$ , with dark-red, injected, transparent walls ; contents clear fluid.

Five or six *follicles* with clear fluid.

(5) Eight or ten *follicles*,  $\frac{1}{10}$  to  $\frac{1}{5}$ , with clear fluid.

Graafian *follicles* of a small size unusually numerous ; no *Corpora Alba* seen.

*Left Ovary*.—Weight, 84 grains ; size,  $1 \times \frac{3}{4} \times \frac{1}{2}$ .

Surface of ovary smooth with slight scars.

(1) Seven *follicles*,  $\frac{1}{20}$  to  $\frac{1}{6}$ , containing clear fluid.

(2) Five or six *follicles*,  $\frac{1}{20}$  to  $\frac{1}{6}$ , containing clear fluid ; two of the



follicles contained blood-stained, clear fluid, and had thin, transparent, injected walls.

(3) Four or five *follicles*,  $\frac{1}{20}$  to  $\frac{1}{9}$ , with clear fluid.

(4) Four or five *follicles*,  $\frac{1}{20}$  to  $\frac{1}{7}$ , with clear fluid.

(5) Trace of *Corpus Luteum*—a brownish-yellow stain.

Three or four *follicles*,  $\frac{1}{20}$  to  $\frac{1}{6}$ , with clear fluid.

The *follicles* were numerous in this ovary.

No *Corpora Alba* seen.

Walls of *follicles* more rigid and opaque than usual, and some slightly congested.

XXIV.—Operation for *Hæmatosalpinx*, May 5, 1885. E. L.,  
æt. 37. Married. Last cat. April 21.

*Right Ovary* torn away and part only removed. Ovarian tissue spread in a thin layer over a cyst, which was at least  $1\frac{1}{4}$  in diameter and contained granular, brownish-red altered blood. Walls of cyst lined with a flaky, yellowish-brown membranous tissue, below which the walls were injected with numerous bright red points.

Surface of ovary smooth and opaque.

Ovarian tissue of a dense fibrous character and no normal follicles were seen.

*Corpora Alba*,  $\frac{1}{3}$ , with an irregular central nodule of hard gritty matter, which did not crumble, but cut with a knife like bone; nodule,  $\frac{1}{10}$  diameter, semi-transparent, and yellowish-brown in colour.

Two *Corpora Alba*,  $\frac{1}{10}$  and  $\frac{1}{6} \times \frac{1}{10}$ .

*Left Ovary*.—Ovarian tissue spread in a thin layer over a central cyst the size of a Tangerine orange, and containing altered brown blood. Shining bands of fibrous tissue intersected walls of cyst, which were injected and stained with blood.

Surface of ovary puckered and roughened by adhesions. Colour, opaque white; at one point a yellow scar with a central opening.

(1) Section through this scar showed remains of *Corpus Luteum*,  $\frac{1}{3} \times \frac{1}{20}$ , with thin, yellow collapsed walls stained with blood.

*Corpora Alba*  $\frac{1}{3} \times \frac{1}{20}$ .

Trace of *Corpus Luteum*,  $\frac{1}{4} \times \frac{1}{30}$ .

(2) Two *Corpora Alba*,  $\frac{1}{10}$  and  $\frac{1}{4} \times \frac{1}{20}$ .

(3) Trace of *Corpus Luteum*,  $\frac{1}{6} \times \frac{1}{30}$ .

*Corpora Alba*,  $\frac{1}{10}$ .

No trace of any normal follicles. Tissue of ovary fibrous, like the right ovary.

XXV.—Operation for Myoma, May 11, 1885. E. S., *et.*, 45.  
Married. Last cat. May 9 to 16.

*Right Ovary*.—Weight, 36 grains; size,  $\frac{3}{4} \times \frac{1}{2} \times \frac{1}{3}$ .

Lipoma of broad ligament.

Surface of ovary corrugated and yellowish white; ovary much shrunk.

(1) Five *Corpora Alba*,  $\frac{1}{10}$ , in one a yellowish-brown blood-clot, dark-red in centre, shading at sides to brown colour; no defined walls.

(2) *Corpus Luteum*,  $\frac{1}{5}$ , with collapsed, thin yellow walls, and containing trace of brown clot.

*Corpora Alba*,  $\frac{1}{6}$ , central corrugated nodule,  $\frac{1}{7}$ , easily shelled out.

(3) *Corpora Alba*,  $\frac{1}{10}$ .

No normal follicles in ovary.

*Left Ovary*.—Weight, 52 grains.

Lipoma of broad ligament. Surface of ovary white and corrugated, in some parts yellow as though fat deposited. At one end a projection, size of pea, congested on one side.

(1) Section through this projection opened a *Corpus Luteum* with slightly-corrugated yellow walls,  $\frac{1}{30}$ , and containing a firm dark-red clot.

Two traces of *Corpus Luteum*,  $\frac{1}{10}$  and  $\frac{1}{20}$ , and two faint brown stains in tissue of ovary.

(2) Trace of *Corpus Luteum*,  $\frac{1}{9} \times \frac{1}{20}$ ; colour brown.

(3) Two *Corpora Alba*,  $\frac{1}{8}$  and  $\frac{1}{10}$ .

One trace of *Corpus Luteum*,  $\frac{1}{10} \times \frac{1}{20}$ .

No normal follicles.

Ovarian stroma congested and yellow, as though fat deposited in it.

XXVI. Operation for Chronic Ovaritis, May 12, 1885.  
M. K., *et.* 32. Married. Last cat. April 25 to 30.

*Right Ovary*.—Weight, 75 grains; size,  $1\frac{1}{4} \times \frac{3}{5} \times \frac{1}{2}$ .

Surface of ovary smooth; yellowish white in colour; marked with a few linear scars and bluish transparent spots.

(1) *Corpora Alba*,  $\frac{1}{6} \times \frac{1}{9}$ .

Three follicles,  $\frac{1}{6}$  to  $\frac{1}{10}$ , containing clear fluid. In the smallest, the lining membrane transparent and congested.

(2) Traces of two *Corpora Lutea*,  $\frac{1}{12}$ .

Three or four *follicles*,  $\frac{1}{6}$  to  $\frac{1}{10}$ , clear fluid ; walls transparent and somewhat congested.

Two *blood-clots*,  $\frac{1}{12}$ , without any defined walls.

(3) Two *follicles*,  $\frac{1}{6}$  and  $\frac{1}{9}$ , clear fluid and transparent congested walls.

(4) Remains of *Corpus Luteum*,  $\frac{1}{6} \times \frac{1}{20}$ , with thin collapsed yellow walls and faint trace of dark clot.

Three or four *follicles*,  $\frac{1}{6}$  to  $\frac{1}{12}$ , clear fluid and slightly congested transparent membranes.

(5) Five *follicles*,  $\frac{1}{6}$  to  $\frac{1}{10}$ , clear fluid and congested transparent membranes.

*Left Ovary*.—Weight, 103 grains ; size,  $1\frac{1}{4} \times \frac{6}{10} \times \frac{1}{2}$ .

Surface of ovary smooth and yellowish white, except at the lower border, where it was deeply congested, to an extent  $\frac{3}{4} \times \frac{1}{2}$  inch, with a central opening.

(1) Section through this showed—

*Corpus Luteum*,  $\frac{3}{4} \times \frac{1}{4}$ , with corrugated fawn-coloured walls,  $\frac{1}{10}$ , and containing clot, part of which was soft and dark-red, the rest pale organised lymph. The fawn-colored walls were much congested, and the corpus luteum appeared quite recent.

*Corpora Alba*,  $\frac{1}{10}$ .

Three or four *follicles*,  $\frac{1}{6}$  to  $\frac{1}{10}$ , clear fluid and congested transparent membranes.

(2) *Corpus Luteum*,  $\frac{1}{4} \times \frac{1}{6}$ , thin yellow walls, and with trace of dark clot.

Trace of *Corpus Luteum*,  $\frac{1}{12}$ .

*Follicle*, with deeply congested transparent membranes stained with dark blood.

Three or four *follicles*, clear fluid.

(3) Three or four *follicles*,  $\frac{1}{6}$  to  $\frac{1}{10}$ , clear fluid and congested lining membranes.

(4) Three or four *follicles*,  $\frac{1}{6}$  to  $\frac{1}{10}$ , clear fluid and congested lining membranes.

XXVII. Operation for Chronic Ovaritis, May 14, 1885. E. P.,  
æt. 33. Last cat. May 10 to 14.

*Right Ovary*.—Weight 110 grains ; size  $1\frac{1}{4} \times \frac{3}{4} \times \frac{1}{2}$ .

Surface of ovary wrinkled, and with a dark congested patch  $\frac{1}{3}$ -inch in diameter.

(1) Section through this showed—

*Corpus Luteum*,  $\frac{1}{3}$ , with thin corrugated yellow walls, and containing firm dark-red clot.

*Corpora Alba*,  $\frac{1}{9}$ .

Seven *follicles*,  $\frac{1}{5}$  to  $\frac{1}{10}$ , clear fluid.

(2) *Follicle*,  $\frac{1}{6}$ , with clear fluid.

(3) Four *follicles*,  $\frac{1}{5}$  to  $\frac{1}{7}$ , clear fluid.

(4) Two *follicles*,  $\frac{1}{6}$  to  $\frac{1}{7}$ , clear fluid.

*Left Ovary*.—Weight 120 grains; size  $1\frac{1}{10} \times 1 \times \frac{1}{2}$ .

Surface of ovary opaque and corrugated at one end.

(1) On section, deep in ovary, a small *dermoid cyst* opened about  $\frac{3}{8}$ -inch in diameter, and containing short hairs  $\frac{1}{2}$ -inch long, and an orange-colored oily fluid; hairs closely packed in cyst.

Remains of *Corpus Luteum*,  $\frac{1}{6} \times \frac{1}{15}$ ; distinct yellow walls, and containing trace of blood-clot.

Six or seven *follicles*,  $\frac{1}{5}$  to  $\frac{1}{10}$ , clear fluid.

(2) *Dark clot*,  $\frac{1}{3} \times \frac{1}{20}$ , with no distinct lining membrane (appeared as if blood effused into a follicle without any change occurring in walls).

Three or four *follicles*,  $\frac{1}{5}$  to  $\frac{1}{10}$ , clear fluid.

(3) *Dark clot*,  $\frac{1}{3} \times \frac{1}{20}$ —like that in Section (2).

Two *follicles*,  $\frac{1}{7}$ , clear fluid.

(4) Three or four *follicles*,  $\frac{1}{5}$  to  $\frac{1}{7}$ , clear fluid.

(5) Three or four *follicles*,  $\frac{1}{5}$  to  $\frac{1}{7}$ , clear fluid.

Normal *follicles* unusually numerous and large.

XXVIII.—*Operation for Myoma, May 23, 1885. S. W., æt. 29. Married. Last cat. May 9 to 14.*

*Right Ovary*.—Weight, 92 grains; size,  $1\frac{1}{3} \times \frac{3}{4} \times \frac{1}{2}$ .

Surface of ovary smooth and marked with numerous cicatrices; colour yellowish white with a few transparent follicles shining through. The middle of the lower border of ovary occupied by a congested red patch  $\frac{3}{4}$ -inch long, and crossed by a ragged tear.

(1) Section through this showed a—

*Corpus Luteum*,  $\frac{7}{10} \times \frac{4}{10}$ , with deeply-corrugated fawn-coloured walls, injected by numerous capillary vessels, and containing a firm clot—dark red—at one side, and pale the other.

Remains of *Corpus Luteum*,  $\frac{1}{6} \times \frac{1}{8}$ , yellow walls, and containing remains of clot.

Trace of *Corpus Luteum* (a brown stain).

*Corpora Alba*,  $\frac{1}{10}$ .

Four *follicles*,  $\frac{1}{6}$ , clear fluid and transparent walls.

(2) Remains of *Corpus Luteum*,  $\frac{1}{5} \times \frac{1}{10}$ ; yellow layer and remains of clot.

(3) Three or four *follicles*,  $\frac{1}{6}$  to  $\frac{1}{10}$ , clear fluid.

Three traces of *Corpus Luteum* (stains of brown).

(4) *Corpora Alba*,  $\frac{1}{10}$ .

*Follicles*,  $\frac{1}{5}$ , clear fluid, and very slightly injected transparent walls.

Four or five *follicles*,  $\frac{1}{6}$  to  $\frac{1}{10}$ , clear fluid.

(5) Three traces of *Corpus Luteum* (brown stains).

Three *follicles*,  $\frac{1}{4}$  to  $\frac{1}{10}$ , clear fluid.

*Follicle*, clear fluid and slightly injected transparent walls.

*Left Ovary*.—Weight, 68 grains; size,  $1\frac{3}{4} \times \frac{1}{2} \times \frac{1}{3}$ .

Surface of ovary smooth and yellowish-white, and opaque yellow patch,  $\frac{1}{5}$ , on free border, with a central cicatrice. A dark purple patch,  $\frac{1}{6}$ , with two linear tears through cortex of ovary.

(1) Section through yellow patch showed—

*Corpora Alba*,  $\frac{1}{5} \times \frac{1}{6}$ , corrugated opaque white walls, and containing firm, smooth, opaque white clot.

Two *follicles*,  $\frac{1}{5}$  and  $\frac{1}{7}$ , clear fluid and transparent, deeply-injected walls, easily stripped out of cavity.

*Corpus Luteum*,  $\frac{1}{3} \times \frac{1}{6}$ , with thin corrugated yellow walls, containing a moderately firm dark-red clot.

Trace of *Corpus Luteum*,  $\frac{1}{3} \times \frac{1}{10}$ .

Three or four *follicles*,  $\frac{1}{5}$  to  $\frac{1}{10}$ , clear fluid.

*Follicle*,  $\frac{1}{9}$ ; clear fluid and intensely congested walls.

(2) Remains of *Corpus Luteum*,  $\frac{1}{6} \times \frac{1}{10}$ .

Three *follicles*,  $\frac{1}{6}$  to  $\frac{1}{10}$ , clear fluid and slightly injected walls.

(3) Section through the purple patch showed a *follicle*,  $\frac{1}{6}$ , containing a soft dark-red blood-clot, and with soft transparent injected membrane deeply stained with blood.

Trace of *Corpus Luteum*,  $\frac{1}{5} \times \frac{1}{10}$ .

Trace of *Corpus Luteum*,  $\frac{1}{7} \times \frac{1}{9}$ .

*Corpora Alba*,  $\frac{1}{10}$ .

Four or five *follicles*,  $\frac{1}{10}$  to  $\frac{1}{7}$ ; clear fluid.

## REVIEWS.

*Notes on Diseases of Women.* By JAMES OLIVER, M.D., M.R.C.P., F.R.S.Ed., Assistant Physician to the Hospital for Women, London. Hirschfield Brothers, London, 1888.

This work consists of thirteen chapters, chiefly of a clinical nature, on some of the more common diseases of women. In chapter three, Dr. Oliver deals with sterility from a physiological standpoint, and points out a factor, too often overlooked, namely, that sterility frequently results from sexual incompatibility. He also draws attention to the part played by a luxurious and inactive mode of life. He says, "I have frequently remarked that women who tend to lay on fat rapidly are most apt to become barren. In the majority of such cases the adipose tendency is a morbid condition, and sterility is a mere concomitant, depending as it does upon that condition inducing the obesity."

In dealing with the question of malignant diseases of the uterus, the author states that his clinical experience leads him to believe that malignant disease and diabetes are, from an inheritance point of view, co-related to each other. He has at the present time under his care two sisters, the one suffering from advanced malignant disease of the uterus, the other from pruritus vulvæ dependent upon diabetes.

The work throughout displays considerable evidence of original observation. We think it will be read with interest and profit by gynæcologists and others who have to deal with disorders of the female sexual organs.

*On Gonorrhœal Infection in Women.* By WILLIAM JAPP SINCLAIR, M.A., M.D. London: H. K. Lewis, 136, Gower Street, W.C., 1888.

Dr. Sinclair has presented us with a most complete and exhaustive account of one of the most difficult and unsatisfactory conditions of the pelvic organs which the gynæcologist has to deal with. His work consists of, to a large extent, a reprint of papers which he published in the *Medical Chronicle* in 1887. The author is careful to state in his preface, that although he is writing on the subject of venereal disease in the female, he lays no claim to being a specialist in this class of disease. In this, however, we think that he is over modest, as in our opinion no one who has practised gynæcology as long as Dr. Sinclair has done so, and has attained such a position as he has done in the treatment of diseases of women, can fail, to say the least of it, to possess more than the average knowledge of such a widely spread disease as gonorrhœa. As he states in his preface, the subject has been very much overlooked, in this country more particularly. He has done good work in drawing the attention of gynæcologists to the question of gonorrhœal affection in the female, inasmuch as it is they who, all said and done, have the first opportunity in recognising the disease, and consequently of treating it. Of course these remarks will not apply to those cases that find their way into the Lock hospitals, and it is for this reason that the work of Dr. Sinclair is all the more valuable. Dr. Sinclair states that: "Gonorrhœa as it occurs in the female sex is still in this country strangely neglected by general practitioner and specialist alike. Its symptoms, its differential diagnosis, and the ravages which are its immediate or remote results, are hardly recognised or understood, and the treatment of it, as ordinarily practised, is contemptible. Yet the virus of this disorder gives rise to a group of diseases, a series of pathological conditions, which, by reason of their clinical interest, and their social and moral consequences, surpass in import-

ance any other class of affections with which the gynæcologist is called upon to deal." In giving the historical retrospect of pathology in gonorrhœa in women, Dr. Sinclair has divided the past into three periods: (1) Before Noeggerath's treatise appeared; (2) Noeggerath's work and immediate influence; (3) Neisser's discovery. Dr. Sinclair draws attention to the light manner in which gonorrhœa in women is looked upon by medical men. He says, "Gonorrhœa in the woman is as ruinous as syphilis; there is little to choose betwixt the diseases. The men must protect the women. The great majority of them are amenable to reason, and would listen to the dictates of humanity and of honour if their consciences were appealed to. With regard to their wives, there is also the sentiment of self-interest to influence their actions. It only needs definite knowledge to be diffused among them as to the risk of inflicting untold suffering upon those whom they wish to protect, to greatly influence their conduct; and the only guardians of the necessary knowledge are the medical profession. While the doctors look upon gonorrhœa in women as a mere bagatelle, what can be expected of their self-indulgent male clients? As long as the medical practitioner believes that he can produce a 'precious result' at a critical time with a little nitrate of silver solution, the education of the lay man will not begin; he will not be adequately impressed with the physical grounds for exercising self-control in order to escape infection, or for the need of persevering industry and self-denial in order to completely and rapidly eradicate the disorder once contracted." It is indeed high time that this subject should be studied seriously, and appreciated at its real value by the medical profession at large. The thanks of medical readers are due to Dr. Sinclair for the exhaustive and complete account of the whole subject which he has made.



*SUMMARY OF GYNÆCOLOGY, INCLUDING  
OBSTETRICS.*

*Rapid Dilatation of the Cervix Uteri.* By Y. H. BOND, M.D.

The author claims that by the rapid dilatation of the cervix uteri, he is able to permanently cure flexions, stricture of the internal os uteri, chronic ends, trachelitis, conical cervix and dysmennorrhœa. Instead of gradual dilatation or incision by hysterotome, which are practised by many, a large and increasing number of eminent gynæcologists are now employing the method of rapid dilatation. It may be accomplished at one sitting, requires a short rest only after the operation, and is more certain in its results.

The *rationale* of the treatment is not difficult to understand, for by it the circular fibres of the cervix are lacerated at various points, while the longitudinal escape injury.

There are two degrees of rapid dilatation. In the first only moderate dilatation is performed, and no anæsthetic is necessary. In the second degree the patient is anæsthetised and placed in the lithotomy position; antiseptic irrigation of the vagina is practised; the cervix is caught by a tenaculum and drawn down and a Corley-Sims' dilatator is introduced into the cervical canal, and dilatation completed. This divulsion occupies from ten minutes to half an hour. If any endocervicitis or endometritis is present, the curette is applied, another antiseptic douche is given, and a hard rubber plug passed into the dilated passage. This plug is retained for forty-eight hours if no untoward symptoms arise. This plug is worn off and on until the second menstruation, when the cure is *completed*.

*Salines in Peritonitis following Abdominal Section.*

By T. M. BALDY.

This article was read in 1887 before the Obstetrical Society of Philadelphia, and evoked considerable discussion. The author has taken the hint from Mr. Lawson Tait, and now administers saline purgatives on the second or third day after abdominal section, especially when there is distension and vomiting. He has administered them in large doses—i3—several times a day, and has supplemented them with enemas of turpentine. In his experience, all bad symptoms begin to subside when watery stools are passed. The administration of salines by causing active peristaltic movements of the intestines prevents the formation of adhesions and bands; they prevent the throwing out and organizing of lymph to any great extent, and they drain the abdominal cavity of the products of inflammation. Opium, on the other hand, keeps the bowels “in splints,” favours the formation of adhesions, and closes all the natural channels by which the poisonous products can escape, and thus, instead of allaying, favours inflammation.

*Abdominal Section for Ruptured Typhoid Ulcer and for Intestinal Obstruction.* By R. B. BONTECON, M.D.

Abdominal section for ruptured typhoid ulcer is, we believe, an extremely rare operation, and Dr. Bontecon when he performed the operation, was under the impression that it was the first performed for the purpose of closing a ruptured typhoid ulcer. The case is shortly as follows: T. D., æt. 25 years, unmarried, first began to feel unwell about October 1st, 1887. When seen on October 6th by Dr. Bontecon, the patient was suffering from fever, right iliac tenderness and gurgling, with other symptoms of typhoid fever. The illness pursued a favourable course until October 15th, when the thermometer registered 100°, and

the pain in the right iliac region was severe; tympanites over abdomen marked. On October 17th the temperature was still at 104°. The patient was vomiting a prune-juice matter; bowels constipated; abdomen tympanitic; legs drawn up; much abdominal pain; cold clammy perspiration; expression pale and pinched and eyes sunken. Peritonitis from intestinal perforation was diagnosed, and an operation advised as the only chance of saving the patient's life. This was submitted to. On opening the abdomen a quantity of blood-stained serum escaped. The ilio-cæcal valve was brought up into the abdominal wound and an ulcer found perforating the vermiform appendix. The portion of intestine with the ulcer was turned in longitudinally, and its peritoneal edges brought together by Lembert's sutures. No other perforation could be found. The peritoneal cavity was thoroughly cleansed and the abdomen closed. The patient expired shortly after the operation, but the operator believes that before long cases of this kind will be saved by prompt surgical aid.

*Primary Tumours of the Broad Ligament with a Table of Seventeen Cases.* By BAYARD HOLMES, M.D.

The patient had been twice married; had no children by the first husband, but one by the second husband three years before Dr. Holmes saw her. After the birth of this child the patient was treated for laceration of the cervix and retroflexion. The periods were regular though scanty, and in June, 1885, the patient was supposed to be pregnant, owing to the enlargement of the uterus. In July, 1886, menstruation was normal, and a careful examination revealed a tumour the size of a black walnut lying on Douglas' pouch. It was free and movable, and was thought to be an enlarged ovary, but its gradual increase in size and its increasing immobility during the next nine months negatived the diagnosis. As the patient seemed anxious for the removal of this tumour, an operation was accordingly performed with every antiseptic precaution. On opening the abdomen two-thirds of the

tumour was visible on the right side of the pelvis, lying close up to the uterus. It was almost immovable. The tumour was hard, elastic, and smooth, and covered by peritoneum, which was reflected on to the walls of the pelvis. The right ovary was not found; the left appeared normal. A transverse incision was made through its peritoneal covering, and the tumour gradually enucleated. The broad base from which the tumour was removed was ligatured with silk sutures one inch apart from each other, the peritoneal edges were turned in and stitched together, and the abdominal wound closed. The patient made a perfect recovery.

Both by naked eye inspection and microscopical examination the tumour presented evidences of being a myoma of the broad ligament. A table of seventeen cases is published with the results. From this we see that six recoveries ensued; there were six deaths after operation from peritonitis or hæmorrhage; in two cases no operation was performed, death resulting in one of these two from suppurative peritonitis; in three cases, though an operation was performed, the result is not stated. The origin of these rare tumours is still somewhat uncertain. By some they are regarded as arising from the non-striped muscular fibres existing in the broad ligament and tubes, and this seems supported by the researches of Graetzer and especially Cohnheim. That they do not arise from the ovary is shown by the form of the tumour, its microscopical elements, and its want of a pedicle.

Dr. T. A. EMMET illustrates the use of the vaginal tampon in the treatment of certain effects following pelvic inflammation (*New York Medical Journal*, February, 1888). The only class of cases in which he has derived any special benefit has been where he has supposed the blood vessels had degenerated into a varicose condition, and when this state of the veins has been brought about from the effects of local peritonitis with adhesions from the loss of the connective tissue, and from injury where the fascia has been involved. Plugs, the size of a walnut, are inserted, the patient being in the knee-chest position.

PROVINCIAL MEDICAL JOURNAL.

*Ovariectomy in Aged People.* By FANCOURT BARNES, M.D.,  
M.R.C.P., Physician to the Chelsea Hospital for Women;  
Senior Physician to the British Lying-in Hospital and  
the Royal Maternity Charity.

Among the various abdominal sections occurring in my practice during the year 1886 were three cases of cystic disease of the ovary in women, aged sixty-five, seventy, and sixty-seven respectively.

*Case 1.*—M. A. R——, æt. sixty-five; married thirty-one years; menstruation ceased fourteen years ago, iv. para; last pregnancy twenty-four years ago. History: Six years ago noticed the abdomen began to swell. During the last four years abdominal pain has increased, the abdomen has become enlarged, and she has been unable to attend to her duties. On examination, the abdomen was found to be extremely distended by a symmetrical fluctuating tumour, reaching into the epigastrium and pressing on the diaphragm as to cause considerable dyspnoea. May 13th.—The patient was placed under ether and the usual incision made through the abdominal walls. Three large cysts were successively evacuated by the trocar, and thirty-five fluid pints evacuated. The pedicle was so broad that it was necessary to transfix and tie it in two places. The abdomen was then closed with silver sutures. The patient recovered without any unfavourable symptom, but as she was much emaciated it was deemed advisable to place her on a water-bed. The pulse and temperature were normal throughout.

*Case 2.*—R. H——, æt. seventy; married, vi. para. About eighteen months ago she noticed that the abdomen was gradually increasing, and that during the last three months it had rapidly become larger. She is extremely emaciated. The abdomen measured forty inches round the umbilicus. The distance from the umbilicus to the symphysis pubis measured eleven and a-half inches. Her general condition

was far from satisfactory. She vomited after every meal. Her breathing was carried on with such difficulty that she had to be supported in bed. Examination of the heart revealed a loud systolic murmur. Bronchitic rales were heard over the whole of the chest. April 5th.—The patient having been anæsthetised by chloroform, an incision of five and a-half inches was made through the abdominal wall. The cyst was found to be adherent throughout to the abdominal wall. The adhesions having been broken down, the cyst was evacuated. On drawing out the tumour the uterus followed it, and, as might be expected in a woman of her age, was atrophied, and attenuated to such a degree that it might easily have been transfixed and secured as part of the pedicle. The pedicle was then transfixed and tied, and the abdomen closed. A poultice was applied to the chest the same evening. April 6th.—As she complained of much pain in the lower part of the back, she was placed on a water-bed. April 10th.—The wound was dressed with iodoform, and two sutures removed. April 13th.—The remaining four sutures removed. April 14th.—Loud bronchitic rales heard over both lungs. April 28th.—Wound healed. May 8th.—Patient out of bed and doing well.

*Case 3.*—B: T—, æt. sixty-three; married forty years, x. para; last catamenia twelve years ago. She noticed a swelling in the abdomen two years ago. She was tapped ten months before admission into the hospital. There was a systolic murmur of the heart. The abdomen was distended from the symphysis pubis to the sternum. The veins over the abdomen were distended, and there was œdema of the walls. She measured forty-six inches round the umbilicus. On September 3rd the abdomen was opened, and the cyst was found to be firmly adherent throughout the whole of its anterior surfaces to the abdominal parietes. These adhesions having been stripped from the abdominal wall, the trocar was inserted, the tumour removed, and pedicle tied with silk ligature. The pulse and temperature remained normal until September 11th, when the sutures were removed and the

wound found to be firmly united, the only difficulty arising being a suspicious-looking red surface over the lower part of the sacrum. She was placed on a water-bed, and directions were given that she should be turned over from side to side at regular intervals. On the 2nd October she left the hospital perfectly well.

My chief object in recording the above cases is to draw attention to what I believe to be the most important factor in the management of aged people in ovariectomy, and that is, a sufficient amount of movement in bed. The ordinary practice is to keep the patient motionless on her back during, at least, the first five or six days after an operation. It is difficult enough for the young and fairly healthy subject to pass through this ordeal without developing bed sores or hypostatic congestions. As a matter of fact, I have seen retroversion of the uterus produced in this way in a young woman on whom I had performed perinæorrhaphy. It has for some time past been my custom to see that the patients are not kept fixed in this way on their backs. In all of the above cases I took particular pains to see that the patients were carefully moved first on to one side and then on to the other, so that they were not continuously lying in the dorsal position. In fact, as far as my experience goes, the danger from bed sores is the only complication to be dreaded after ovariectomy in aged people. It is obvious that the only way of avoiding this is to give the patient a change of position from time to time.

*The Use of the Curette for the relief of Hæmorrhage due to Uterine Fibroids.* By H. C. COE, M.D.

A reprint originally read before the Obstetrical Section of the Academy of Medicine. The following are the conclusions arrived at by the author.

1. The hæmorrhage in cases of fibroid tumour of the uterus has its source, not in the tumour itself, but in the hypertrophied endometrium.

2. The hæmorrhage is not directly proportionate to the

size of the tumour, but to the extent of the mucous surface—venous obstruction and the menstrual congestion in the mucosa are the chief active causes.

3. In certain cases the hæmorrhage can be diminished for a considerable period by thoroughly scraping away the hypertrophied endometrium, and repeating the operation as often as may be necessary to keep the menorrhagia under control.

4. Curretting is merely a palliative measure, but it may enable the patient to survive until she is relieved at the menopause, whereas radical operations too often result fatally.

5. Curretting in these cases should be regarded as an experiment, which, however, is so harmless and so frequently successful that we are justified in giving it a fair trial before advising oöphorectomy, myomotomy, or supravaginal amputation.

6. The use of the curette requires no special skill. It is an operation for the general practitioner, and is much more rational than to allow the patient to become exhausted by repeated hæmorrhages which medication and other palliative measures are powerless to control.

#### CANADA MEDICAL AND SURGICAL JOURNAL.

##### *Some rare forms of Vulvar Tumour.*

By W. P. MANTON, M.D.

The three subjoined cases are of interest.

*Case 1.*—The patient had been troubled with a small tumour in the posterior half of the right labium major for many years, which on examination proved to be a varix. Since marriage it has gradually increased in size. During menstruation it increases in size. At her last pregnancy in 1882 the varix increased in size, and during the passage of the shoulders of the fœtus at delivery, it was ruptured. Firm pressure with pledgets of cotton wool soaked in perchloride of iron effectually checked the hæmorrhage, which was alarming.

*Case 2.*—Patient was sixteen years of age; had begun to



menstruate a little over one year, when a fulness of the left labium major was detected. This fulness became more distinct, and when seen by the author was the size of a walnut. There was some irritation in the growth, but no pain. At each menstrual period the size of the growth increased. Its removal was safely effected and the tumour found to be a varix.

Case 3 was a female aged seventeen, who complained of "small red pimples with white caps" spread over the vulvar and mons veneris. No specific history could be elicited. These papules in time ran together, and soon formed two large growths involving the labia majora. The tumour on the right side was  $3\frac{3}{4}$  inches in length, and  $1\frac{1}{2}$  inches in thickness; that on the left side being  $3\frac{1}{2}$  by  $1\frac{1}{2}$  inches. Secondary condylomatous growths were scattered about the surrounding parts. These growths were removed and eventually the disease was cured. Dr. Manton is inclined to think that in this case the growths were due to some cause other than specific disease, though he is careful to mention that when black wash was applied locally, and biniodide of mercury administered internally, the patient improved both in her general and local condition, a fact which would lead one to suspect specific disease.

#### CHICAGO GYNÆCOLOGICAL SOCIETY.

In the January number of the Journal of the American Medical Association we find the report of four cases of carcinoma of the cervix, by Dr. Christian Fenger, with some remarks on vaginal hysterectomy. The first specimen was from a woman forty years of age, upon whom vaginal hysterectomy was performed. The cervix was involved nearly up to the internal os. The operation lasted two hours, and the subsequent recovery was satisfactory.

In the next case the disease involved the posterier lip, and extended about one inch up the cervix. This operation was extremely easy. The uterus was not retroverted to remove

it ; the ligaments were easily tied, and the peritoneal as well as the vaginal wound were easily closed.

The third case involved the cervix only slightly. Though there were symptoms of a previous perimetritis the uterus was freely movable, but the detachment of the bladder anteriorly was difficult, and a small opening was made into the bladder. This opening was immediately united and caused no subsequent inconvenience.

In the fourth case the disease extended about half-an-inch up the posterior wall of the cervix. The patient was a multipara, twenty-eight years of age. The uterus was large and bulky, and the operation proved tedious and difficult. The recovery of the patient was not uninterrupted, as the temperature continued high for some days. The specimens show that it is difficult to determine whether the carcinoma is limited to the portis, or extends up into the cervix, or even into the body of the uterus.

Dr. Fenger prefers to tie all bleeding points as they appear, as by this means the danger of hæmorrhage is done away with. If possible, the uterus should not be retroverted, but drawn straight down, so that the risks of septic poisoning may be lessened. A variety of methods of draining have been advocated, but after-treatment is best carried out by packing with iodoform gauze. It is more convenient, less troublesome, and can be left *in situ* for days. If possible the ovaries and tubes should be left ; their removal adds to the length and danger of the operation without any compensatory advantage. There is a danger of including the ureters in ligaturing the broad ligaments. This danger is done away with if ligaturing is done step by step. By this means the uterus can be brought lower down, and the final ligature of the broad ligament is hardly likely to include the ureter. The diseased surface is curetted just before the operation, and the surface thoroughly disinfected. Some statistics on the subject of vaginal hysterectomy show that the mortality after the operation has been steadily diminishing since its revival by Czerny, in 1879.

Mundé, in 1884, collected 255 cases with 72 deaths, or a

death-rate of 28 per cent. Fritsch reports 60 cases with 7 deaths or 10.1 per cent; Leopold reports 48 cases with 3 deaths, or 6.2 per cent.; Billroth estimates that 10.5 per cent. of cases operated on for carcinomatous mammæ die; while Schmid calculates the mortality in these cases at 5.2 per cent. Vaginal amputations for malignant disease give a mortality in Schræder's hands of 12.3 per cent.; while Gusserow has a mortality of 9 per cent. With these statistics before us, it would seem that vaginal hysterectomy is hardly more fatal than partial vaginal operations, and as there is a great difficulty in defining the exact extent of the growth, total extirpation of the uterus is safer as to a radical cure of the disease than a partial operation.

#### THE PITTSBURGH MEDICAL REVIEW.

##### *Acute Psychoses following Gynæcological Operations.*

By E. T. ILL, M.D.

The number of operations undertaken to cure neurotic conditions in women are comparatively numerous, especially abroad, though in this country they do not find favour.

An almost exactly opposite condition, where a gynæcological operation has been followed by a neurosis, is, however, of still less frequency; and the cases reported by Dr. Ill are of interest.

*Case 1.*—Mrs. B., æt. 61, the wife of a Methodist minister, came under Dr. Ill's care in November, 1884. She had been married forty years, had had five children, the last twenty-one years previously. There was no history of neurotic disease ever having been present. The patient was suffering from an abdominal tumour, which was diagnosed as an ovarian sarcoma, and consented to its removal. The operation, which lasted one hour and a-half, was carried out with strict antiseptic precautions. There was some fever after the operation, though the wound healed by first intention, and there was no evidence of peritonitis. Ten days after the operation the patient showed

symptoms of melancholia. These symptoms remained until November 28th, twenty days after the operation, when the patient was removed to her sister's house. After a long sleep there she awoke apparently well, and asked if the operation was over. She stated that from the time she passed under the influence of the anæsthetic until November 28th, everything was a perfect blank. Dr. Ill, after discussing some of the causes which might have conduced to this state, thinks that the shock of the operation was the true cause.

*Case 2* was a widow, fifty-seven years old, who was operated on for an ovarian tumour. The growth was firmly adherent to the intestines, abdominal walls, omentum, mesentery and lower border of the liver. There were no pelvic adhesions. The operation lasted two hours; a drainage tube was inserted, and the wound dusted with iodoform. The pulse and temperature remained nearly normal during the succeeding days. Eight days after the operation the stitches were removed and the wound firmly united. The same day the patient began to wander, and three days later became almost maniacal. She was therefore removed from the institution, and after two weeks' mental wandering she gradually improved. She is now perfectly strong and well. In this case the mental symptoms were probably due to the excessive drain put upon the woman by the tumour, and by the frequent tapping she had undergone before consenting to the abdominal operation.

*Case 3* was that of a young married woman, aged twenty-four years, the mother of two children. Ever since a miscarriage four months previously she had been pale and exceedingly nervous. There was present an ulceration of the urethra with cystitis which had been treated without success. Accordingly on January 25th, 1886, Emmet's button-hole operation was performed. Next day she became profoundly melancholic, and this condition lasted for some weeks. The ulceration of the urethra healed, but no improvement took place in the patient's mental condition until five weeks after her dismissal from hospital. No improvement was, however, noticed in the

cystitis. The patient gained strength and flesh, and in May of the same year, as the bladder trouble was almost intolerable, an opening was made into that viscus, with the result that she soon recovered perfectly. In this case the author considers the melancholia was in all probability produced by the drain on the system together with the excessively nervous condition the patient was in before the operation.

A few similar cases have from time to time been recorded. Thus Graube mentions a case of perinæorrhaphy, followed by hypochondriasis; Duerelius reports one after amputation of the cervix. Czempin records five cases of insanity following operations on the pelvic viscera, one of which was fatal.

THE BROOKLYN MEDICAL JOURNAL.

*Laparotomy for Extra-uterine Pregnancy.*

By G. R. FOWLER, M.D.

The particulars of a case of extra-uterine pregnancy are shortly recorded in this article. The patient had, for about a year and a-half before consulting Dr. Fowler, noticed an enlargement of the abdomen, which gradually increased in size and equalled a pregnant uterus at full term. It was semi-elastic to the feel and somewhat movable. No fluctuation could be detected. A nodulated feeling was found in parts of the tumour. The patient gave a confused history, but was positive she had always been regular. When seen by Dr. Fowler she was suffering from septic infection, and, as it was thought the tumour ovarian cyst or fibro-cystic tumour, abdominal section was advised and consented to.

After the usual incisions were made and the tumour came into view, it was found to be closely adherent to the uterus, and its walls extremely thin. The head and limbs of a foetus about the seventh month could be felt through the walls. Sponges were packed round the tumour, which was now opened and the foetus and debris removed. All adherent portions of the placenta were carefully left untouched. Every-

thing contained in the sac was extremely foetid, and the hopes of the operator for the recovery of his patient were small. The sac was next washed out with a warm solution of hydro-naphthol, its edges carefully stitched to the edges of the abdominal wall, a drainage tube was placed in the lower angle of the wound, and the dressings applied. Small portions of debris from time to time drained away, but in three weeks the patient was discharged. The sac walls were probably composed of layers of the broad ligament.

THE INTERNATIONAL JOURNAL OF MEDICAL SCIENCES.

*Six Self-inflicted Cæsarian Operations with recovery in five cases.* By R. P. HARRIS, M.A., M.D.

The author shortly discusses the origin of the Cæsarian operation, and concludes that probably the operation was performed long before the time of the Cæsars, possibly by the Egyptians in the reign of the Pharaohs. The cases tabulated by Dr. Harris are shortly as follows :—

*Case 1*, in 1769 ; subject and operator a slave on a plantation in Jamaica. When in labour opened the abdomen to the left of the middle line with a broken butcher's knife. The first and only incision passed through abdominal and uterine walls, inflicting injuries upon the foetus, which was extruded. A coloured midwife, who was then called in, tied, cut the cord, and replaced it in the uterus. Some hours later a doctor re-opened the wound, washed the intestines, removed the placenta through the wound, and then reclosed it. The child died on the sixth day from trismus nascentium. The mother recovered. There was no pelvic deformity in this case. She had had three previous labours which had terminated naturally.

*Case 2*.—Jan. 29th, 1822, Rensselaer County. Reported by Dr. Sam. McClellan. Patient and operator a quadroon aged fourteen years. Pregnancy illegitimate. While in labour opened her abdomen and uterus with a razor. She had

extracted one foetus which she had hidden in the snow two hundred yards from the house when she was seen. She immediately ran into the house with a second child and a number of intestines hanging from the wound. Dr. Basset was called in and removed the second foetus, together with a placenta with two umbilical cords.

The abdominal wound inflicted by the patient on herself was irregular, about four inches in length, situated about two inches above the umbilicus. At right angles to this was a second wound two inches in length close to the sternum. The edges of the wound were brought together by an interrupted suture and some ointment spread over it. The woman in six weeks had recovered perfectly.

*Case 3.*—September 26th, 1876. Tetschen, Bohemia. The patient was the mother of seven children, four of whom were delivered without assistance, two with forceps, one after craniotomy. Labour began and lasted for three days without any progress. As the patient was suffering from considerable pain and abdominal distension, she determined to relieve herself by opening her abdomen. The skin was divided slowly, but as the child did not appear she made several more cuts which opened into the uterus and divided the placenta. The latter she removed and then came upon a leg, by which she extracted the entire foetus. She then tied the cord and placed the child beside her. There was considerable hæmorrhage, which nearly proved fatal to the mother. The wound was about  $3\frac{1}{2}$  inches in length, of an S shape. All intestines were cleaned and returned into the abdominal cavity; the wound was dressed with a five per cent. carbolic solution, fixed with strapping and a firm bandage applied round the abdomen. The child, when seen by Dr. Von Guggenberg, was dead, but the mother soon recovered.

*Case 4.*—Date? probably 1879. Pristina, Turkey. A peasant woman, after being in labour for three days, opened her abdomen with her husband's razor. A living child was born and the wound sewn up by a neighbour. Mother and child recovered.

*Case 5.*—Date not stated. Kiriloff, Novgorod, Russia. Reported by Dr. Aisenstadt. The patient was a married woman; 6 para; pregnancy illegitimate. At full term she opened her abdomen in the middle line with a peasant's axe. The abdominal wound was  $5\frac{1}{2}$  inches long, commencing three-quarters of an inch below the ensiform cartilage. The uterine wound was  $4\frac{1}{2}$  inches in length. A live child was extracted through the wound. Some hours after she had delivered herself she attempted to walk, but fell down from exhaustion and loss of blood and died the same evening. The method of treating the placenta in this case is not mentioned. The child lived eight or nine days. There was no pelvic deformity in this case, which is the only fatal one of the series.

*Case 6.*—March 28th, 1886. Viterbo, Italy. Reported by Drs. Baliva and Serpiera. A peasant woman, aged twenty-three years, was near full time of pregnancy. As her condition was the cause of annoyance to her, she opened her abdomen with a kitchen knife. The wound was  $4\frac{3}{4}$  inches in length, and "situated in the middle of the right iliac region, from a little above the level of the umbilicus downward, and from without inward." The fœtus, which was extracted through this opening by the patient, had several lacerations on its chest, head and neck, and had died before breathing. The placenta was perfectly healthy. The wound was closed and its edges kept in opposition by a bandage wrapped tightly round the abdomen. Two hours after the operation she walked over half-a-mile into Viterbo, and breakfasted with her sister on bread and coffee. She then walked about the town for some time, "to show herself and put an end to the current talk about her pregnancy." On returning home she was seized with much faintness, abdominal pain and vomiting. The bandage slipped up and allowed some coils of intestine to protude. Drs. Balira and Serpieri were now called in. They cleaned and replaced the intestines, and closed the wound with wire sutures twisted. The woman made a complete recovery, and forty-eight days after the operation was walking about. Dr.



Harris remarks upon the fact that in all these cases the pelvis was normal, and had any abnormality existed the mortality would have been greater.

THE AMERICAN LANCET.

*Ovarian Tumours.* By C. G. DARLING, M.D.

The author reports a case of ovarian tumour which presents somewhat unusual symptoms.

The patient had for several weeks been troubled with a constant uterine hæmorrhage, which she attributed to the change of life, as the flow at each menstrual period became more profuse than at other times. No examination was made at this visit, as the patient objected. Medicines were, however, administered which improved the health of the patient for some time. After an interval of comparative good health the menorrhagia and metrorrhagia returned. An examination now revealed an abdominal tumour in the left iliac region, and the uterus measured six inches in length by four or five broad. A few days later a second tumour was discovered in the right iliac fossa. Both tumours were uniformly rounded, the size of an orange, and seemingly intimately connected with the uterus. A diagnosis of fibroid tumours of the uterus was made, and the patient ordered suitable medicine. About a month later the abdominal cavity was found to be so distended with ascitic fluid that the size or shape of the tumour could not be ascertained. The ascitic fluid was drawn off by aspiration, and the tumours found to be greatly increased in size. The patient was now in an extremely feeble condition, and suffering from peritonitis. Two months after the first examination the cystic nature of the tumours became apparent, and abdominal section performed. On opening the abdomen it was found that numerous adhesions existed, together with acute peritonitis. The cysts were removed, the ascitic fluid drained off, and the peritoneal cavity thoroughly sponged out. The patient slowly but gradually recovered from the operation.

## THE MEDICAL NEWS.

*Ustilago Maydis as an Oxylic.* By Dr. W. A. DORLAND.

The use of this drug in parturition in place of ergot has been tried, but little is known of its action. The author having experimented with it finds that in lower animals it acts upon the spinal cord, paralysing first the sensory, later the motor tracts, finally involving the motor nerves. Its action upon the uterus has been studied. In about twenty minutes after the administration of the drug, the pains of labour, if present, become increased in severity, frequency and duration, and assume a clonic character. The indications for the employment of the drug during parturition are (1) failure of pains with complete dilatation of os uteri, (2) inefficiency or entire suspension of the parturient pain, (3) a condition of uterine inertia threatening or producing post-partum hæmorrhage. The fluid extract is the most reliable form in which to administer the drug, the dose of which varies from 5ss to 3ij; it may, however, be used hypodermically in cases of 10 to 15 minims. Its advantages over ergot are that it does not produce irregular contractions; it only contains 2½ per cent. of fixed oil, whereas ergot contains 25 to 28 per cent; it can be procured at a cost of 50 per cent. less than ergot.

## ANNALES DE GYNÉCOLOGIE.

*Hybrid Gonorrhæal Infection in Women.* By BUMM.

At the meeting of the German physicians and naturalists held at Wiesbaden in 1887, Bumm communicated an article with the above mentioned title. By hybrid infection he understands the introduction of two distinct kinds of organisms. The process is as follows: One of the varieties creates in the organ on which it acts a morbid state, and it is then, upon this prepared ground, that the second kind of organism settles. As an example, a lung, which has once been the seat of a pneumonia, is accessible to the bacillus tuberculosis. A

similar process takes place in gonorrhœal infection in women. Thus in suppuration of Bartholini's glands, the micro-organism of gonorrhœa first invades the part and is followed by the micro-organism of suppuration.

*Perinæorrhaphy* (Tait's method). By SANGER.

Sänger has performed perinæorrhaphy by Tait's method seventeen times: seven times for prolapsus, more or less marked, of the vaginal walls and uterus; three times for complete lacerations, and seven times for incomplete lacerations. In every case the result has been most excellent. He considers this method of operating simple and a great advance in plastic surgery. It has many advantages over all other operations for lacerated perinæum.

*Perforation or Cæsarian Section.* By WYDER.

The conclusions arrived at by the author are as follows: (1) Contracted pelvis being divided according to the degree of contraction into four classes; when the contraction belongs to the third or fourth class, it is necessary, if the case be met with in time, to discuss the question of premature delivery as well as that of perforation or Cæsarian action. The choice of operation may be left to the woman. (2) When the contraction is of the first or second degree it is advisable, when the patient is a primipara, to perform Cæsarian action only when it is absolutely necessary; in multipara, the operation is only justifiable if the former labours have been greatly complicated. While the mortality of Cæsarian section is double that of perforation, no one has a right to assert that the former should be entirely substituted for the latter operation. According to Crédé, Cæsarian section gives a maternal mortality of 17.5 per cent.; perforation, according to Wyder, 8.4 per cent.; and premature delivery 8.2 per cent.

*Multiple Abscesses in Suckling Children.* By ROULLAND.

The author concludes this article, in which he adduces six examples, as follows: (1) Multiple abscesses occur in the

subcutaneous cellular tissue of suckling children. (2) They owe their origin to a variety of causes. (3) In certain cases they are attributable to an organism peculiar to the individual or to a hereditary constitution. With regard to the hereditary diathesis, syphilis ranks first in importance and frequency; scrofula generally occurs as a later manifestation. (4) A large number of cases may be classed under the term abscesses of infection. This class arises, according to Escherich, by the penetration into the glandular orifices of pyogenic organisms, which are normally deposited on the surface of the epidermis. (5) Auto-infection also plays a part in the production of these abscesses.

#### JOURNAL D'ACCOUCHEMENTS.

##### *The Action of Antipyrin in Painful Uterine Contractions.*

By Dr. CHOUPE.

The author has already noticed the good effects antipyrin has in uterine colic. His latest researches have impressed him with the value of this drug in cases in which ergot of rye causes painful contractions. In one case of uterine fibroid, in which ergot was administered and caused severe pain lasting for several hours, antipyrin administered in doses of 2 grammes was the means of arresting the pain in twenty minutes. When the antipyrin was administered at the same time as the ergot, no pains whatever were complained of. The carminative influence of the antipyrin lasted sufficiently long to allow a second dose of ergot to be taken one hour and a-half later without pain. The absence of pain could not be ascribed to the deterioration in the quality of the ergot, for the contractions continued as before, both in intensity and duration; and the improved condition of the patient and cessation of hæmorrhage proved that the ergot was acting powerfully.

BULLETIN GÉNÉRAL DE THERAPEUTIQUE.

*Ovariectomy.* By Dr. TERRILLON.

In the January number of this Journal Dr. Terrillon records his third series of thirty-five ovariectomies. The operations were performed as a rule in Salpêtrière, and extended from October, 1886, to November, 1887. This series comprises operations undertaken for the removal of cysts or tumours of the ovaries, and does not include abdominal sections for removal of inflamed ovaries, or healthy ovaries in the case of fibromata. Out of thirty-five operations there were four deaths, all of which occurred in the first sixteen operations.

*Case 1.*—Patient aged 50; had noticed the tumour for five years. Had had symptoms of peritonitis. At the operation, which lasted two hours, many adhesions were found. The tumour was a multilocular cyst with solid masses, partly decomposed and suppurating. Patient died next day of exhaustion.

*Case 12.*—Age 61 years; had been ill for eighteen months. The patient was very feeble on her admission to hospital, and had suffered from peritonitis. The operation lasted  $1\frac{3}{4}$  hours, and was exceedingly difficult, owing to the numerous adhesions to the posterior wall of the uterus and surrounding organs. The pelvis was drained by two drainage tubes. The cyst was multilocular with fatty and calcareous walls. Death took place the fourth day after the operation from exhaustion.

*Case 14.*—Patient was 49 years of age; had been ailing for three years, and had frequently had attacks of peritonitis. The operation lasted  $1\frac{1}{4}$  hour. On cutting through the abdominal walls the cyst was found to be adherent to the parietes, the omentum and diaphragm. The cyst was multilocular with gelatinous contents. Death occurred two days after the operation.

*Case 15.*—This was the fourth and last case of death in the series. The patient was 22 years old, and had been ailing for two years. The cyst had twice been punctured, and a small

quantity of gelatinous fluid withdrawn. The operation lasted 1  $\frac{1}{4}$  hours, and was incomplete. There were many adhesions to the abdominal wall and other parts, which on being torn through gave rise to serous oozing which could not be controlled. The peritoneal cavity was washed out. The tumour was a multilocular cyst with friable walls. Part of the tumour had suppurated. Death from shock occurred five hours after the operation. In commenting on this case Dr. Terrillon points out that the two punctures of the cyst, during pregnancy, were followed each time by symptoms of suppuration of the cyst, and complicated the case immensely. The varieties of tumours removed comprised twenty-one multilocular ovarian cysts, seven unilocular cysts, six parovarian cysts and one sarcoma of the ovary. The operations in all but two cases were complete. The operator exercises the greatest care as regards cleanliness, and insists on the use of carbolic acid as an antiseptic; the spray is according to him "useless, inconvenient and dangerous." In all cases in which much blood is effused into the peritoneal cavity, through washing out of that cavity is practised; in the simple cases the less elaborate the peritoneal toilet is the better the result will be. In the after treatment it is very desirable that the bowels should be kept open from the beginning. Calomel and castor oil will be found of great use, and the magnesia salts are often employed. On the second or third day after the operation beef-tea, tapioca, milk, &c., are allowed, and the patient's strength recruited as much as possible.

#### *Laparotomy in the Treatment of Peritonitis.*

By Dr. PODREZ.

Cases of peritonitis, treated and cured by abdominal section, are still scanty. The publication of every fresh case is consequently of importance. In the case before us the patient was thirteen years of age, suffering from purulent peritonitis. Frequent collapses having threatened the patient's

life, an abdominal section was submitted to. At the operation much purulent matter was removed, and the peritoneal cavity washed out with a solution of boracic acid of the strength of 5 : 100, and a sublimate solution of the strength of 2 : 1,000. The patient recovered.

*Laparotomy for Tubercular pyo-Salpingitis.* By M. JEANNEL.

An interesting case is recorded by M. Jeannel, in which the difficulty of diagnosing between cystic disease of the ovary, and dilatation of the tubes is well marked. The case was one in which a tumour, the size of a 7½ months' pregnant uterus, filled the abdomen. To the touch its walls were smooth and regular; there was an obscure fluctuation present; and all the ordinary signs and symptoms of pyo-salpingitis were absent. A multilocular ovarian cyst was diagnosed, but on opening the abdomen it was found to be a large tubercular pyo-salpinx. The ultimate result of the case was unfortunate; an abscess formed in the pelvis, and the patient died of septicæmia and general tuberculosis.

CENTRALBLATT FÜR GYNAKOLOGIE.

*A Case of Total Absence of Uterus; Vagina Normal.*

By Dr. STEINSHNEIDER.

This absence of the uterus and ovaries is of interest from its rarity. The subject of the report was 28 years old, had been married five years, but had no children. She had never menstruated. For the last three years she had suffered from various ailments, which she believed were the cause of her sterility. She had never experienced menstrual molimina, neither had she ever experienced sexual desire nor any voluptuous feelings. On examination she presented an anæmic appearance; was of middle stature with an average sized pelvis, and small rounded mammae. The labia majora and minora were large and loose, and without adipose tissue. The vagina, which was three inches in length, ended as a smooth cul-de-sac. No uterus or ovaries could be detected either by bimanual or rectal examination.

*Fatal Intoxication by Dilute Solutions of Bichloride of Mercury.*

By Dr. STEFFECK.

The patient was a multipara, who miscarried when five months pregnant. The foetus was macerated. The placenta was retained, and as hæmorrhage persisted for some hours the vagina was plugged with iodoform gauze. Twenty-four hours after the birth of the foetus, as the placenta was still retained, the patient was anæsthetised, the ordinary antiseptic vaginal douche given, an intra-uterine one of one quart of 1 : 5,000 was used, the placenta removed, and a second intra-uterine douche administered. Both intra-uterine douches consisted of warm mercurial solution of 1 in 5,000. Ergotin was also administered. One hour after the removal of the placenta symptoms of mercurial poisoning set in, with stomatitis and acute nephritis with anuria. Seven days later the patient died. At the autopsy were found dysenteric enteritis, acute parenchymatous nephritis, with emphysema and pulmonary œdema. Steffeck remarks that the mercury entered the system through the placental site. Every precaution was taken to empty the uterus after the intra-uterine douches, and uterine contraction after removal of the placenta was marked.

## INTERNATIONAL JOURNAL OF MEDICAL SCIENCE.

*The Elastic Ligature in Myotomy, and in Supra-vaginal Amputation.* By Dr. KUHN.

Most surgeons who practise the extra-peritoneal method of treating the stump after the removal of fibroids, admit that the intra-peritoneal method is the ideal one. Kuhn, at a meeting of the Aerztl. Centralverein, in 1886, reported six cases of supra-vaginal amputation in which the stump had been treated intra-peritoneally, with the result that only one death occurred. In this case the elastic ligature surrounding the stump was entirely buried by plastic lymph, while the stump itself appeared perfectly healthy. This mode of procedure is



as follows: the rubber ligature consists of two tubes, three and one half and six millimetres in diameter which are joined together (one within the other?) and are previously soaked for two days in a 5 per cent. solution of carbolic acid. This cord is passed twice round the base of the tumour and is tied in two knots. The stump is sutured with catgut. If the uterine cavity is opened, the cervical mucous membrane is excised in a funnel-shaped mass. The stump is thoroughly disinfected with a solution of bichloride of the strength of 1 in 1,000. The entire operation is conducted under the carbolic spray.

THE AMERICAN JOURNAL OF OBSTETRICS.

*Intra-Ligamentary Ovarian Cysts.*

By WILLIAM GOODELL, M.D.

A short description of the true ovarian cyst, and the par-ovarian or broad ligament cyst precede the remarks on the subject of the paper. Intra-ligamentary cysts are of two varieties; the first is a unilocular papillomatous cyst, containing clear limpid fluid with papillary ingrowths; and is probably a cystic degeneration of the vertical tubules of the parovarium. It is encapsuled by the folds of the broad ligament to which it is loosely attached.

The second variety is the multilocular intra-ligamentary cyst, which is much more frequently met with than the former kind, and is much more firmly attached to the surrounding organs with which it forms dense adhesions. The origin of the multilocular intra-ligamentary cyst is still a debated point. According to Sinéty, the growth is due to follicular degeneration of supplemental ovarian tissue, lying between the folds of the broad ligament. This theory is supported by the observations of Wiegel, who found twenty-three accessory ovaries in 600 autopsies; but against it is the presence of the papillomatous ingrowths present in these cysts. Coblenz regards these cysts as developments of the tubules in the paroöphoron

—a supposition which will account for every character of the cyst, except the presence of daughter-cysts. Doran, whose views on this subject are now generally accepted, considers that these cysts are the result of a morbid growth of stray foetal relics which exist in the hilum of the ovary. This theory accounts for every peculiarity of intra-ligamentary cysts. Instead of growing upwards in the peritoneal cavity, intra-ligamentary cysts tend to grow downwards and inwards, separating the folds of the broad ligament from each other, and from the surrounding structures, and forming dense connections with every organ it comes in contact with. The uterus is displaced laterally, and sometimes greatly elongated. The cyst restrained in its further downward growth may peel the peritoneum off the anterior abdominal wall and bladder. The cyst is now extra or sub-peritoneal, but in its further upward growth it may stretch the peritoneum to such an extent that that membrane gives way and the cyst becomes intra-peritoneal. The colon and small intestines are sometimes pushed up in front of the cyst, so that we find resonance on percussion. The papillary growths may then cut the cyst wall, and finally ulcerate it, and the contents escape into the peritoneum. An important question then arises as to the malignancy of the infection. In the author's experience a favourable prognosis may generally be given, as in the majority of cases which have come under his notice complete recovery has taken place.

*The Relative Effects of Electrolysis, and Rapid Dilatation in the Treatment of Sterility and Dysmenorrhœa.* By HENRY D. FRY, M.D.

The class of cases especially alluded to in this paper is that in which the dysmenorrhœa and sterility are due to an elongated cervix with a pin-hole os; constitutional cases or local morbid conditions are excluded entirely. Though it is questionable whether a contracted cervical canal is ever the cause of dysmenorrhœa, the author is satisfied that when means are

taken to relieve the contracted canal the result is beneficial. The methods employed in dilating the cervix are numerous, and the same objection is applicable to all. Though relief may follow immediately dilatation has been practised, the contraction will, in time, become as marked as formerly, and dysmenorrhœa will return. Of all the methods of dilatation rapid dilatation is the only one which can compare with electrolysis. The treatment of the latter means is simple, in that no anæsthetic nor assistant is needed ; the treatment can be carried out in the consultant's room, and the patient resume her work shortly afterwards. Rapid dilatation, on the other hand, requires an anæsthetic, and rest for some days after. Electrolysis is safer, unless used by the careless and ignorant. The electrode is passed into the cervical canal, and is gently pressed against the constriction, which in a short time is overcome. Rapid dilatation tears the cervical tissue, and is frequently followed by inflammatory conditions. The immediate and remote effects of electrolysis are better and more lasting, especially when currents of small intensity are employed. When rapid dilatation is employed the original contraction and dysmenorrhœa in time return.

*Interstitial Salpingitis.* By H. J. BOLDT, M.D.

The author recognises two kinds of salpingitis; the catarrhal form, which may be either simple or purulent ; and interstitial salpingitis. Both these varieties are secondary ; the inflammation in most cases having extended from the uterus. In interstitial salpingitis the first change met with is an œdematous swelling of the connective tissue between the muscular bundles ; the blood vessels are dilated and engorged with blood, and lying round them are inflammatory corpuscles, some of which are emigrated leucocytes, while others are derived from the connective tissue. These inflammatory corpuscles are found not only round the blood vessels, but also infiltrating the connective tissue, especially where the œdema is not marked. Later on, these inflammatory corpuscles

increase in number, and are derived from a breaking up of the unstripped muscular fibres, besides the two sources already mentioned. The nuclei of the muscle fibres break up into small granules; then the whole fibre breaks up into masses of varying size, and finally is transformed into a row of inflammatory corpuscles. Chronic interstitial salpingitis may become formative, that is, after more or less destruction of the tissue has taken place; new fibrous tissue is formed with a subsequent thickening of the tube walls. Another termination is atrophy. Here the epithelium lining the tube becomes shorter than normal, the cilia are lost, the calibre of the tube is greatly diminished, and the connective tissue surrounding the tube is greatly increased. So long as the epithelium remains no occlusion of the tube will take place; but in time the epithelial cells break up, some to be carried away, some to infiltrate the adjacent tissues as inflammatory corpuscles, and occlusion then takes place. Peritonitis generally accompanies interstitial salpingitis, the infection being conveyed along the connective tissue.

#### *Removal of the Uterine Appendages.*

By MARY A. DIXON, M.D.

We find in this article a report on five cases in which the ovaries and tubes were removed for disease. The author discusses the titles which have, at different times and in different places, been fastened on to the operation. The term, *Battey's operation*, is out of court, as that operation is undertaken to bring on artificially the climacteric period, and for this purpose healthy ovaries are removed. The term "spaying," when applied to removal of the uterine appendages is a misnomer, and Dr. Mary Dixon objects most strongly to it. The five cases are shortly as follows.

*Case 1.*—Patient æt. 22; a nurse. When 17 years old had malarial fever, and menstruation was suspended for eighteen months. The reappearance of menstruation was accompanied by severe pelvic pain, which has now become

chronic. Vaginal examination revealed a right ovary, enlarged, tender, and prolapsed. A month after the patient was first seen the right ovary was removed; the left ovary being left *in situ*. Recovery was perfect. Patient some months later looked strong and well, expressed herself as cured.

*Case 2.*—Patient æt. 18; was first seen in January, 1887. Complained of severe and constant sickness and inability to perform her duties as a domestic servant. Had been obliged to leave every situation she had gone into. Some days before and during menstruation, dysmenorrhœa was excessive. Vaginal examination showed anteflexion, adherent and tender appendages. A course of treatment was prescribed, but as no improvement took place the uterine appendages were removed. Recovery was perfect and the result satisfactory. A microscopical examination proved that the Graafian follicles were intensely inflamed, many being the seat of hæmorrhages. They were surrounded by inflammatory layers which were stratified.

*Case 3.*—Mrs. L., æt. 36; married, no children. For the last thirteen years has complained of great pelvic distress and pain, with weakness, prostration, and inability to perform her ordinary household duties. Vaginal examination:—Ovaries enlarged, prolapsed and tender. For six months treatment was tried in hospital, but as no improvement took place the appendages were removed. Result most satisfactory in every way. Microscopical examination showed that both ovaries were in a state of sub-acute inflammation. The vessels were the seat of arteritis and endarteritis, and in some cases were blocked by collections of micrococci.

*Case 4.*—Mrs. M., æt. 43. Had been suffering for many years; was weak, anæmic, and quite unfitted for her work. Complained of constant pain and bearing down in the pelvis. Has suffered from severe and constant uterine hæmorrhages. Examination:—Uterus retroflexed, with a fibroid in fundus. Appendages extremely tender and low down. Abdominal section performed with very satisfactory result. Microscopical examination showed that the tubes were the seat of acute

catarrhal salpingitis; the ovaries were atrophied and shrunken.

*Case 5.*—N., æt. 31, married twelve years; four children. Has suffered constant and severe pain in pelvis and back for the last ten years. Examination :—The appendages enlarged, tender and prolapsed; uterus retroverted and bound down. Laparotomy was performed and the patient made a rapid recovery. Some months later the patient asserted that she was in excellent health and had not been so well for fifteen years. Microscopical examination :—Tubes, suppurative parenchymatous salpingitis, ovaries, interstitial ovaritis.

In all these cases abdominal section was performed for a diseased condition of the appendages; and the subsequent history of the cases seems to justify the operation.

## NOTES.

We understand that Mr. Knowsley Thornton has been appointed Consulting Surgeon to the New Hospital for Women, where the physicians are women, in place of Mr. W. Appleton Meredith, who has resigned that office.

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Full price will be paid for copies of parts V. and X. of the BRITISH GYNÆCOLOGICAL JOURNAL, if sent to Messrs. John Bale & Sons, 87-89, Great Titchfield Street, Oxford Street, London, W.

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William Japp Sinclair, M.A., M.D., C.M., has been elected Professor of Obstetrics, at Owens College, Manchester, in succession to Dr. Cullingworth, resigned.

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OBLIQUE QUOTATION.—Dr. John Williams in his presidential address to the Obstetrical Society, says: "For the account of Dr. Arthur Farre I am indebted to Dr. Priestley, who wrote the obituary notice which appeared in the *Lancet*, and from which I quote freely." In this notice it is stated "that Dr. Farre, with his co-examiners, Drs. BARNES and PRIESTLEY, resigned the office of Examiner in Midwifery to the Royal College of Surgeons." And this is how Dr. Williams proceeds to quote *freely*: "This post he resigned in 1875, together with his fellow-examiners, Dr. PRIESTLEY and Dr. BARNES, as a protest against the admission of imperfectly qualified persons to the right of being placed on the Medical Register." The effect of this oblique quotation might be to imply, first, that Dr. Priestley was the senior to Dr. Barnes, which was not the case; and secondly, that Dr. Arthur Farre and Dr. Priestley were entitled to equal merit with Dr. Barnes in thwarting the Council of the College of Surgeons in their attempt to carry a measure detrimental to the interests of the profession and injurious to the public. Had Dr. Williams sought fairly to represent the society of which he is president, he might, by consulting the Transactions of the Society for 1876, have seen that the Society passed a resolution, in moving which, Dr. Murray said, "He could not but admire the unhesitating resignation of Dr. Barnes;" and that the resignations of Dr. Farre and Dr. Priestley really followed, and were in fact forced, by Dr. Barnes' independent action.





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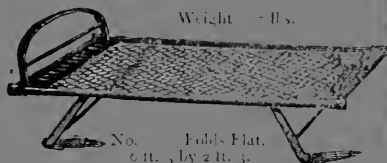
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